



AN  
E S S A Y  
ON A  
NEW THEORY OF COLOURS,  
AND ON  
*COMPOSITION IN GENERAL;*  
ILLUSTRATED BY  
COLOURED BLOTS  
SHEWING THE  
APPLICATION OF THE THEORY  
TO COMPOSITION OF  
FLOWERS, LANDSCAPES, FIGURES, &c.  
*IN THREE PARTS,*  
BY M. GARTSIDE,

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THE SECOND EDITION.

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"RETURN FAIR COLOURING!"

CHASTE SEDUCER! SAY,

WHAT LAWS CONTRoul THEE, AND WHAT POWERS OBEY."

DU FRESNOY.

London:

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1803.



ESSAYS

NEW THEORY OF COLOURS

COMPOSITION IN GENERAL

COLOURS IN ARTS

APPLICATION OF THE THEORY

ALPHABETIC LANDSCAPE PICTURES

IN THREE PARTS

BY M. HARRISON

THE SECOND EDITION

LONDON

Printed by J. B. Smith, 1800

At the end of the second volume, the reader will find a list of the names of the artists who have been consulted in the preparation of the work.



TO THE RIGHT HONOURABLE  
**LADY SOPHIA GREY.**

**T**HE permission to address this little work to Your Ladyship, is not the least of the many favours you have conferred upon me.

Duty to my Pupils, and some hope that it may be of use to accelerate their progress in an Art you encourage, induced me to undertake it; and it is both my pleasure and my pride to have this public opportunity of assuring Your Ladyship that I am, with the greatest gratitude and respect,

Your most obliged  
and most devoted Servant,

**M. GARTSIDE.**



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the greatest gratitude and respect, as the Author of it, to  
Your Ladyship, and to the noble family to which you belong.  
Your most obliged  
and most devoted servant,  
M. CARSTENSEN



## P R E F A C E

TO THE

### S E C O N D   E D I T I O N .

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AS a reference to the former Edition of this Work is frequently made in a Work entitled Ornamental Groups, lately published; and as the attention of the possessors of that Work may be directed to this Essay, the Author thinks it would be treating the Public with disrespect, to refer them to a Work that might be in any respect rendered more perfect: She has, therefore, studiously attended to the different criticisms passed upon the former Edition, both by indifferent people, and also by her particular Friends. The principle upon which the theory is founded has been approved of; but previous to its being now a second time presented to public notice, it has undergone a careful revision as to style; some parts that were thought obscure



she has endeavoured to express in a clearer manner; and others that did not discuss the subject sufficiently, have been enlarged. The Work is also now presented to the Public, it is hoped, in a more acceptable manner as to *Price*; which in the first edition, owing to the Author's inexperience in the management of public Works, was fixed too high; although the expence attending it fully justified the Publisher's estimate. In order, however, to remedy the error, as far as it is possible, the *addition* now published may be had of the publisher T. GARDINER, for *Half-a-Crown*; or it may be added to a second part of this Work, which will be speedily published; and in which the principles of the theory will be extended to Landscapes, &c.

It may possibly appear presumptuous in one, who is professedly only a flower painter, to offer any thing like instruction to them who are practitioners in the higher branches of the Art; but that is by no means the Author's intention; she means only to present the principle to their notice, and to point out its application to different objects, as well as flowers, by blots adapted to the purpose.

The difference of opinion alluded to in the following pages,



respecting the number of prismatic colours, also whether each is an original colour of itself, or only produced by a mixture of the two contiguous ones, not being of importance to the subject in question, I shall only observe, that painters reckon but three primitive colours, Yellow, Red, and Blue; and that an examination of the prismatic spectrum has led to the consideration and knowledge of the different powers and qualities of these three colours, which essentially differ from each other.

They may be considered as three distinct heads of three distinct *families* of colours; each comprehending all the Yellows, all the Reds, and all the Blues, from the lightest to the darkest tints; and these families are no ways related to each other, but perform different offices in the prismatic system. Yellow illuminates, Red warms, Blue is opposite to both these, and is of a cold retiring nature: these at least are the effects that our corresponding *material* colours produce when applied to the purposes of painting; and what makes it remarkable is, that although any one of these three colours will unite and mix with either of the other two separately, so as to form *another* pure brilliant prismatic tint, yet no one of them will unite with the other *two together*.



For when *three* are combined, the colours are debased; and when mixed in a certain proportion, destroyed;\* and black, or darkness, the privation of light or colour produced. Without entering at all into the question before alluded to, respecting the prismatic colours, it is certain from experience, that even with our gross materials, we can produce, by different mixtures of the three prismatic colours, Yellow, Red, and Blue, colours *similar* to all the other ethereal prismatic tints, although in a degree very far inferior in point of beauty. We see *them* arrayed by nature in harmonious succession; and if we interrupt that succession, we perceive the harmony is immediately destroyed: for the three primitive colours being, as before observed, of different natures, they will not associate together; but require the mediation of a third colour, formed by a mixture of any two of these three colours. It is that mixture, then, which produces the harmony so pleasing to the eye, and which conducts it insensibly from one to another; we will say from Yellow to *Green*, and from Green to *Blue*; or in like manner, from Yellow to Orange, from Orange to *Red*, from Red to Violet, and from Violet to *Blue*. Thus the eye travels gradually from one to another of the three primitive colours, without being offended by too quick a transition from one to

\* For that proportion which produces *black* See page 12.

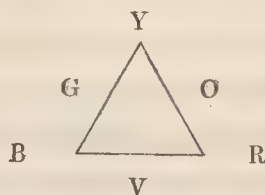


the other, which would be the case, were it not for the intermediate tints, Green, Orange, and Violet.

This explains the nature of the harmonizing tints; and I shall endeavour to explain the contrasting tints, as both are made the subjects of the following blots, and though particularly specified in each, yet they may perhaps be better understood by this explanation.

By the contrasting tint, is meant one which is the most opposite in its nature from that to which you wish to oppose it: thus, for instance, Yellow, Blue, and Red, as has already been shown, are essentially different from each other, but not so much so as for any one of them to form the greatest contrast to the other; a *still greater* may be produced to Yellow: for instance, by the two together, Blue and Red, which form Purple or Violet. In this colour, the opposition is *double*; and when there is an equal quantity of both these colours in the mixture, the strongest contrast to Yellow is produced. Thus the intermediate tints, Violet, Green, and Orange, form the strongest contrast to Yellow, Red, and Blue. This may be rendered more clear, by inspecting the following diagram, where the three primitive colours being placed at the three

angles of an equilateral triangle, present both the harmonizing and contrasting tints to each colour at one view. If this diagram be well considered, it will be found a certain guide for arranging colours in whatever subject they may be employed upon; for nature is uniform in her laws; the objects may be changed on which colours are thrown, but the distribution of light and colour is the same throughout all her works.



In this diagram, let Y, R, and B, represent the three primitive colours, Yellow, Red, and Blue; if Y be produced to R, and R to Y, the compound formed by the conjunction of these two is Orange:—if B be produced to R, and R to B, it is Violet; and by the conjunction of Y and B, the colour formed is Green. The angles, therefore, represent the true primitive colours; the central intermediate points the pure compounds, Orange, Green, and Violet; and every spot between these show the different shades of these compounds, each partaking most of the nature of the primitive to which it approximates.



ON  
COLOURS,  
AND  
THEIR ARRANGEMENT IN GROUPS.

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IT is not intended in the following pages to explain the nature, or cause of colours, or to speak of the theory any further than as it relates to the effect of colours in painting. To that end it is necessary to observe, that the rays of the sun convey colour as well as light and heat; that there are said to be seven original, or primary colours, which are all visible in the rainbow, or through a prism; red, orange, yellow, green, blue, indigo, violet. Notwithstanding this, some are of opinion, that there are in reality only three original colours, red, yellow, and blue; others think it probable that there are four, including indigo, differing in opinion from philosophical experiments on the rays of light. Be this as it may, it is certain, that by compounding the first three colours the other four are produced, at least they are very nearly imitated: for instance, if you mix red and yellow, they produce orange; if yellow and blue, you get a green; with red and blue, a violet; and with blue and violet, indigo; thus are four of the colours produced by the other three.



Red, yellow, and blue, when mixed together, will also produce brown, and even black, when in the following proportions, "fifteen parts blue, "five of red, and three of yellow;" or, without observing this nicety in proportioning the parts, which is rather speculatively than practically just, let your eye be your guide: it may be easily done. But what may be surprising to those unacquainted with the nature of colours, all the seven mixed together will produce white; and though not a pure colour, yet one that can be called nothing else; and if not useful as a colour, it is of importance to know, that all the variety of tints, when mixed together, destroys the strength of each other, and produces a weak unmeaning one. There are other combinations also that produce white, as will be mentioned hereafter. But from what little has been said, a person, unacquainted with the theory, will have a more enlarged idea of the property of each colour, and will be better able to tell what effect the mixing such and such colours, on the pallet, will have. They will be aware, that the orange, though formed to the hand by the colourman, is a mixture of the primitive colours, red and yellow; that green is a mixture of yellow and blue, and so on. It will be obvious also, from very little practice, that by dividing, or separating the particles of each colour, either by spreading them thinly with water upon paper, or by mixing white with them, any tint may be produced, from the fullest the colour itself will make, to the palest degree of it next to white; and it must be observed, that in objects which are all of one colour, for instance, all red or all blue, those parts of them that the light strikes full upon, appear paler and lighter than the other parts, which, without being in shade, are not so strongly enlightened. Now it is the business of a painter to imitate this effect of light upon an object, either by the artifice of spreading the colour thinly upon those parts, and leaving it thicker upon the others, or by using the colour, mixed with white, to make it lighter, which produces the same effect. How every colour and tint, to be met with in nature, is to be formed, either the experience gained by practice, or the seeing another person do it, must inform a learner; so many colours being produced by working one tint over another on the paper. Therefore we must leave this part of the business, and proceed to the arrangement of colours.



Colours may be divided into three classes, light, warm, and cold; those that incline to red and yellow, are termed warm, those that incline to blue or black, cold; from the first two resembling in colour the sun and fire, the latter night and darkness. And as the primitive colour of light is white, all colours approaching to that, of course, are termed light. Now, if two men, the one dressed in white, or a warm colour, yellow or red; the other, in a cold one, blue or black; stand at a distance, you will perceive the man in white, &c. &c. much plainer than the man in blue, &c. inso-much, that though both are equally distant, he that is in white, &c. will even appear nearer to you: a plain proof that light colours come forward to the eye, and cold ones retire from it.

It follows, therefore, if you wish to give roundness, or projection to any part of an object, you would, from the foregoing observation, place a light, and warm colour on that part you want to come forward, and a cold one on that you wish to go back, and retire from the eye. There are other essential points to consider in forming a composition of colours; one is, that as there requires a certain degree of shade to set off the light, so there should be a certain degree of cold colour to balance the warm tints, the one answering to the other, so as to unite the two extremes gradually, and imperceptibly with one another; but still in such a manner as to have the general tone a warm one: for nothing is more unpleasing than harsh cold shades, nor any thing more inconsistent with a strong light. It is as if you had placed the shades of evening with the light of noon, and there is an entire difference between them; the shades of morning being warm, mellow, and agreeable, whereas those of evening are cold, and disagreeable: and the impropriety of introducing shades of that tint, with a warm light, must be obvious; and yet, it may be easily done by those who do not consider the *cause* of these shades, which, in the one case, is owing to the retiring light; in the other, only to the interception of some object between them, and the sun, which strongly enlightening the object, it casts a strong shade, whose extremities are always tinted with the colour of the object that casts the shadow, and which being blended with the colour of that it falls upon, produces that soft, mellow shade before spoken of. The first step

towards a knowledge of composition in painting, is to understand perfectly the strength, and management of each colour separately, which are their proper contrasting, and which their harmonising tints; without this you cannot dispose of them with judgment in a full group; for colours are to the eye what the notes in music are to the ear, and will either produce harmony or discord, according as they are managed. I shall endeavour to explain what has, and will be said on the subject, by examples of different groups of flowers, &c. ; but before I speak of particular groups, I must mention the harmonising tints, without which it is impossible to form a group. By harmonising tints, I mean those which should occupy the space between the two extremes of light and shade, and of warm and cold, in short, those that come the nearest to one another; as, for instance, yellow is the harmonising tint to white\*, as being nearest in lightness of tint; orange to yellow, scarlet to orange, red to scarlet, blue to green, indigo to blue, violet to blue, and black to indigo: and when a learner is become an adept in the management of these colours in simple groups, their arrangement in a full one will be no difficulty. I shall beg leave to style this part of the work simple composition, and will now speak of each group separately.

\* There is no doubt but that a weak degree of any other colour will harmonise with white, but yellow is here spoken of in its primitive state.



## A COMPOSITION OF WHITE.

THE true primitive colour of light, unmixed with any other substance, is white. I shall therefore speak of this colour first. Its contrast, or opposite, is of course black, or darkness. But as there never is a case in composition, where a white object is left unqualified by shade, neither is there any, where much pure black is required as a balance to it, so that a dark grey is almost a balance sufficient: for though black must be admitted, it should be with great care, and only in proportion to the pure touches of white in the object. But though a very pleasing effect may, in some instances, be produced in composition by a warm tint, and its contrast, by blending the two extremes together, yet in painting from nature you are unavoidably obliged to employ more; for instance, a white flower and its green leaves: and it may be impossible, with a strict attention to nature, if the composition is a slight one, to give its balance, or contrast, any way but in the ground it is painted on; and white objects should always be painted on a coloured ground, and that ground should be a cold one, otherwise it might catch the eye first; any tint of grey down to black will do: but both one and the other should be mellowed by a mixture of yellow, to soften down that extreme cold hue they would otherwise have, which would be displeasing to the eye.

The contrast, or balance to white is, as has been said, grey and black. The harmonising tint, yellow, from its full to its palest gradation; or, if the subject will not admit of it, then a yellow green, from its full to its palest gradation; and if the subject will not admit of this in the latter state, then the painter's ingenuity is called upon, to introduce one or both these tints by some other means, in this and every other similar instance, but with care not to offend against propriety in the subject. The reflected tint may be composed of some of the principal warm, and next harmonising tints, deadened by black, and made paler with white if requisite. The reflected tint is meant to express that warm lighter shade, to be seen on the dark side of all round bodies at the

extremities, and is supposed to arise from some other object placed in the full light, near to the shadowed part of that you are painting, upon which it throws a reflected light on its extremities: as will be evident, if two balls are held near each other in a line with the light; take away the furthest from the light, and no such reflected tint will appear—all will be darkness on the shade side of the other, if near no other object, and it will stick to the ground if it happen to be as dark as the shade; but produce the reflected tint again, and it will appear to start from it, or from your paper by the same management, in proportion to the judicious arrangement of your tints. It often happens, that the stalks, and green leaves belonging to white flowers, have a tint of other colours, as yellow, orange, red, &c.; in that case it must be remembered, that they can only be admitted in their full, or pure state, in the very smallest proportion; and that if there is necessarily a larger portion of them, they must either be flung into the shade, or their strength broken by another tint; otherwise, it would be a mixed composition, and not a white one. White objects that have an inclination to any other colour, either in parts, or altogether, lose their place in composition as white ones, and belong to that class of colours they have a tint of, and may be considered as lighter reds, blue, &c.

Note. There is another cause for the extremities on the shade side being made less dark than the deepest shade, setting reflection out of the question; and that is, that in point of perspective they should be so, as objects weaken in strength of colour as they retire from the eye, both in the light, and in the shade.



## COMPOSITION OF YELLOW.

THE contrasting, or balancing tint to full yellow, is purple in its deepest degree; to which such a degree of black must be added as will not destroy the purple: for though purple is the most opposite to yellow, yet place purple in the shade, and it will there appear of a deeper hue than in the light; and as the balancing tints are always placed in that part of a composition that is most in shade, it is therefore necessary to add black to express the effect that shade has upon this, and all other colours in that situation. Its harmonising tints are orange, and pale yellow green; the first, being nearly equal to yellow in lightness, harmonises remarkably well: care must be taken, as in the foregoing composition, not to let the orange be too predominant; and to observe the same rule in regard to the reflected tints. If orange is admitted, a tint of blue should likewise be visible in the shade tints: but it may so happen that orange cannot be introduced; in that case, green, in its different gradations, forms the harmonising tint.

A pale yellow composition is managed exactly in the same manner, only weakening the contrasting, harmonising, and reflected tints, in proportion to the paleness of the yellow.

## COMPOSITION OF ORANGE.

THE contrasting or balancing tint to full orange is a blue of the deepest tint, with the aforesaid addition of black. Its harmonising tint is red; but here, as in the foregoing composition, the pure red must be in the smallest

proportion, and be made to graduate into the shade, so as not to interfere, but to harmonise with the principle. As green by no means harmonises with orange ~~alone~~, and still less with red, you must necessarily introduce yellow, which will give you an opportunity of introducing green agreeably; and, by mixing the orange and blue you get an olive, that will suit with both the orange and red: you must likewise have some purple to balance the yellow. The reflected tints, as before directed.

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#### COMPOSITION OF GREEN.

Nothing pleasing could be made of this as a composition, without taking it in its palest degree, as it graduates from yellow; but by making a principle of it in that state, there is room to do a great deal, as it has not only nearly the same degree of lightness as yellow, but may be worked into a very rich effect. Its contrasting, or balancing tint, is pale red, inclining to purple, in proportion as the green inclines to yellow; but this tint must be so subdued by black, as not to be either too bright, or too strong for the green in its palest state.

The harmonising tints, being deeper greens, ~~they~~ will also require deeper reds to contrast them; which are to be subdued with black, likewise in the deepest shade.

The reflected tints are formed, as before mentioned, with the principle of warm tints, and the contrasting one.



## COMPOSITION OF SCARLET.

THE contrast to bright scarlet is green in its deepest degree, with the addition of black ~~which~~. The harmonising tint is full red, or deep scarlet. *But* Care must be taken not to let the scarlet, and pure green, join; as they are too much of extremes to associate in any degree without the interference of red; and even then the two colours must be broken one into the other, if orange is introduced, ~~and which~~ <sup>which</sup> will increase the harmony; you may then have a tint of blue that will assist very much, and if you can introduce a small portion of yellow also, it will be an advantage, as you ~~can~~ then have a purple tint that will give an agreeable effect to the whole; which, with ~~merely the~~ <sup>merely</sup> scarlet and green, you ~~hardly~~ <sup>can</sup> ~~not~~ have.

*especially*

*will*

Pale scarlet is managed nearly in the same manner, only weakening, as aforesaid, the balancing, harmonising, and reflected tints; which are by this means reduced to pale orange, pale red, or pink, with pale lilac; observing to break, and subdue them, as the occasion requires.

## COMPOSITION OF BLUE.

THIS colour, from its cold nature, is so unfit for a principle in composition, that I only give its management with a reference to its place in a full group; and even there, it is only by a mixture of white that you can bring it out of the shade, which is its proper place, and where it serves as an harmonising tint to green. Orange is the contrasting tint, but it must be subdued by black, or it would not answer the purpose; and indigo is the only

harmonising tint that you can freely make use of; so that it is evident this colour, in its deep state, can never be made a principle of. But by a mixture of white you may bring it forward in a certain degree; and it is in that state I shall speak of it. Its contrasting tint is orange, subdued by black and white, so as neither to be too dark, nor too bright for the blue.

Its harmonising tint <sup>is</sup> a deeper blue.

The reflected tint is <sup>composed</sup> ~~made~~ of ~~the~~ pale blue, and a small portion of the contrasting tint.

Whatever green you have occasion to admit must be carefully subdued by black, to prevent it <sup>from</sup> being too powerful for the blue.

## INDIGO.

From what has been said of the foregoing colour, it is scarcely necessary to observe, that this colour cannot form a composition of itself.

## COMPOSITION OF VIOLET.

This colour, in its deepest state, is <sup>also</sup> unfit ~~as~~ for a principle in composition; and its proper place is in the shade. But as three of the prismatic colours, in their gradations from one to another, form each of them a third;—for instance, red graduating to yellow produces orange; and yellow graduating towards blue produces green; blue graduating towards violet produces indigo;—so does violet, the extreme of one end of the prismatic spectrum, graduating towards red <sup>at</sup> the extreme at the other end, produce in ~~its~~ <sup>their</sup> gradations



tions crimson and pink, till ~~it is~~ <sup>they are</sup> lost in full red. I shall therefore consider <sup>the composition</sup> ~~under four heads,~~ <sup>namely</sup> violet, lilac, crimson, and pink. <sup>of violet</sup>

Violet, as has been said, in its deepest degree, is unfit for a principle; but, like blue, may, by <sup>an admixture</sup> ~~the addition~~ of white, be brought out of the shade, and qualified for a more conspicuous situation;—it is then termed lilac.

The contrasting tint to this is pale yellow, but <sup>it</sup> must be so weakened, and subdued, by black and white, as to form a tint neither too deep, nor too bright for the lilac. The harmonising tint is a deeper purple: the greens are also to be subdued, and broken by the purple, black, and white. The reflected tint as before, composed of the principle colour, the contrasting tint, and white: but this colour is unfit for a principle, and it is only with a reference to its place in a full group that it is spoken of here, as it never can in itself produce more than a weak though elegant effect. The contrasting tint to deep violet is full yellow, which must be subdued by black, when you introduce violet in the shade.

### COMPOSITION OF CRIMSON.

THIS colour is also too dark in itself to come very forward in composition; its place is properly in the shade. Its contrasting, or balancing tint, is a deep warm green, with the proper addition of black for the deep shade.

The harmonising tint is violet.

The reflected tint, as before, <sup>is</sup> ~~is~~ composed of the principle and contrasting tint.

But I shall not give a separate example of this colour, as I shall have an opportunity of introducing it in its proper place, in the following composition of pale crimson, or pink.

The contrasting colour to this is a warm green, <sup>yet</sup> pale in proportion to the pink, with the proper addition of black.

The harmonising tint <sup>is</sup> a deeper pink, or crimson; the reflected tint, as before, <sup>is</sup> composed of the principle colour, and contrasting tint: if yellow is introduced into this composition it must be carefully managed, so as not to be too powerful; and a little of the pale yellow, and pale pink, mixed, forms a tint that harmonises exceedingly <sup>well</sup> with the pink. The <sup>admixture</sup> ~~addition~~ of yellow <sup>produces a</sup> ~~gives a~~ pale purple, which is also an advantage; and <sup>it</sup> may be introduced, both in the shade, and at the extremities on the light side. The deep crimson may also be introduced in the shade here, and <sup>it</sup> gives a more forcible effect to the whole.

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HAVING now gone through the whole range of prismatic colours, and shewn the management of each colour separately, I shall next attempt to do the same in the arrangement of them all in full groups; assigning to each <sup>its</sup> ~~their~~ proper place and quantity, according to <sup>their</sup> ~~their~~ respective strength and power in composition, <sup>then</sup> adding such rules ~~for their management~~ as will be necessary <sup>for the management of the whole.</sup>



ON THE  
FULL ARRANGEMENT  
OF  
COLOURS.

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IN order to arrange a variety of colours in a group, so as to produce harmony, attention must be paid to the order in which they are seen in the Rainbow, or the Prismatic Spectrum\*; for, if colours are promiscuously jumbled together, without regard to the *proper quantity of each*, and no other means used to obtain harmony, than merely subduing them by shade, or breaking them by mixing them with one another, it will frequently be impossible to do it that way without departing from nature; and, if they could be ~~kept~~ kept in subordination by those means, still the additional attention to the natural *lightness, strength, and quantity*, of each, is as requisite to be observed, as the rules of perspective in regard to the size, and figure of objects: for,

\* It is scarcely necessary to explain the well-known spectacle alluded to: but as there may be some young ladies who have not seen it, I shall beg leave to inform them it is a mode of separating the component parts of a ray of the sun's light by means of a three-corner'd wedge of glass, called a prism, which will fling them upon any object in their way, such as a sheet of paper, and there exhibit exactly the same colours seen in the rainbow, beautifully blending one into another ~~as seen there~~ and form what is called the Prismatic Spectrum.

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though an object, drawn contrary to these rules, be ~~ever so well~~ shaded, and coloured, so as to escape hurting the eye at first sight, yet, to an attentive observer, the defect would appear, and lessen the value of the picture. So will a group of objects, though separately well painted ~~in every respect~~, still be less pleasing than when ~~in addition~~ they are well arranged as to colour.

It may lay a painter under some difficulty to admit only ~~such~~ <sup>certain</sup> a quantity of one colour, and <sup>yet</sup> keep to nature;—as for instance, in a flower-piece, where the ~~whole~~ specimen of a red, or any other coloured flower, <sup>it</sup> placed in the full light, ~~it~~ may be too much for ~~the quantity of the~~ other colours;—yet it is by no means an insurmountable one, though it certainly requires judgment, and ingenuity in the disposal of the group. But the exercise of these will be amply repaid by the effect <sup>which</sup> an observance of the laws of harmony will produce.

The art of arranging colours lies in bringing all those forward in *order*, that most nearly resemble light and heat, and putting all those back in *order*, as they depart from those standards, and apportioning them according to the rule before mentioned\*, for the distribution of light and shadow: *observing* that, though one quarter of the globe may be said to be enlightened at one time, yet it is not *all* equally enlightened; that quarter contains a gradation of light, as does the dark quarter of shade, and the remaining quarters contain a gradation between the two extremes of light and shade: and in the same manner, to produce true harmony, must the *colours* be arranged, graduating from the extreme bright and warm tints to the extreme cold ones, for if one colour is out of place it destroys that harmony of colour, which is as pleasing to a nice eye, as true harmony in music is to a nice ear. But, though every practitioner in the art of painting must feel the advantage of a scientific arrangement of colours, and all *aim at harmony*, and succeed in a degree proportionate to the method taken to produce it, yet no one can succeed entirely without a fixed principle, or theory to work by; but must

\* In a preceding page of this work, and which will be found to agree pretty nearly with what Sir Joshua Reynolds has said upon the subject.



frequently be at a loss, as I confess myself to have been, from want of clear ideas on the subject; and the conviction that those must be obtained before perfection could be arrived at, has been like a weight upon my pencil, preventing its exertion, making me work without confidence, or satisfaction, and constantly in quest of the guide I wanted.

LAIRESSE proposes a method of coming at the point, by making use of coloured patches of silk, or paper, and placing them before the eye in gradual succession, giving precedence in order to those which struck the eye first, and so on. And his method might answer, in a certain degree; but, in many instances, it would leave the eye doubtful and undecided, and give no information to the judgment, why such and such tints should be preferred, or placed in such, or such situations.

But some late philosophical experiments appear to afford a surer test, as far as they go, and promise, I think, a certain principle to act by\*. The experiments I allude to, are those by Dr. Herschel, for ascertaining the illuminating, and heating power of the rays of the sun: those on the power of illumination answer, in fact, to what Lairesse practised with the coloured patches; only they were tried in a nicer manner with the *microscope*, than could be <sup>done</sup> with the naked eye; and <sup>they</sup> are so exactly specified as to save any one else the trouble of repeating the experiments. They determine the situation of the colours in regard to each other; but the quantity of each must either be determined by <sup>the</sup> ~~their~~ respective heat, or strength, or by the prismatic proportions; possibly they may correspond: for though Doctor Herschel does not specify all the experiments he <sup>has</sup> ~~tried~~ as to *heat*, he says

\* I have sought assiduously from books, &c. and have received information on many different points from the practice of others; yet I have never met with any entire system, or theory for the arrangement of colours: and though I know the old masters took the rainbow for their guide, the little opportunity I have had of seeing their works, has prevented me <sup>from</sup> observing how they availed themselves of the lessons it afforded them. They also possessed a degree of philosophical knowledge, that made them profit more speedily from their observations than any one can do without that knowledge; who must *ignorantly* copy nature, till some scientific person shall point out the way to do it to advantage.

<sup>that he had</sup> traced it through the whole <sup>of the</sup> prismatic range; that it begins in the  
 invisible rays, before it reaches the red, from whence it extends to the utmost  
 limits of the violet rays, and that it is *gradually* impaired as the rays grow  
*more refrangible*; by which it appears, that it is not equally distributed  
 among them, but is chiefly resident in the red rays, and may be proportionally  
 so in all: however, till that is fully ascertained, we cannot judge whether  
 it would afford us a better guide, or not. But it appears to me, that if the  
 relative degree of <sup>was</sup> *heat*, as well as *illuminating power*, which <sup>the</sup> ~~each~~ colour bears  
 to another, ~~were~~ exactly known, a scale might be formed, shewing the proper  
 accompanying tints, both in a pure and compound state, to whatever *principle*  
 one was fixed upon for the centre of a group: till then, we must make use of  
 the best guide we have, which is certainly that of the prismatic proportions,  
<sup>in the</sup> ~~and~~ order they stand <sup>in</sup> as to degree of *illumination*; and possibly none will  
 ever be ~~afforded~~ <sup>discovered</sup> that will increase the harmony. But though the colours, in  
 a great measure, may be arranged, and proportioned by those rules, the  
*qualities* of the colours should be considered, as they all differ in their natures,  
 and produce different effects. There is a strong analogy between them, and  
 the notes in music, for each of them has its *separate* part to perform in a  
 group, <sup>as</sup> ~~that~~ the different notes have in a piece of music; and till their power,  
 and province are fully considered, a painter has as little chance of producing  
 harmony in a group of flowers, as a musician, who has not studied the  
 theory of music, and considered the effect each note would have in a full  
 chorus.

*Yellow*, from its brilliancy, and affinity to light, is fittest to come next it in  
 the light quarter. *Red*, from its warmth, is fit for a prominent place of  
 power, and force. *Orange* stands next to it, but has less power. *Blue*, from  
 its coldness, is fittest for a retiring place in the shade quarter. *Indigo*, from  
 its affinity to black, is fit for the *deepest* shade. *Violet*, from its weakness, is  
 only fit for a retiring situation. *Green* has a double quality; it is equal to  
*yellow* in point of illumination, comes next it in the light, and yet from its  
 cold nature is equally fit for the shadow. But though *blue*, *indigo*, and *violet*,  
 are capable of distinct illumination, and *blue* equally with *red*, not one of them



has warmth enough to fit it for a prominent situation in the mass of warm colours; or as a principal one by itself, but may be introduced in less conspicuous places.

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*The following shews the Prismatic order, and proportion of Colours.*

Red	-	-	-	45 degrees.
Orange	-	-	-	27
Yellow	-	-	-	48
Green	-	-	-	60
Blue	-	-	-	60
Indigo	-	-	-	40
Violet	-	-	-	80

---

*The following shews the order they stand in, in point of illumination, as proved from the before-mentioned experiments.*

The highest degree of illumination lies between

Bright Yellow, and  
Pale Green;

next Orange,  
then Red,  
and Blue equally with Red;  
then Green,  
Indigo,  
Violet.

The result of the foregoing is, that though the prismatic order of colours must, in some degree, guide their arrangement in a group; this order

must be deranged to suit the order of them in point of *illumination*; for it is by the latter rule a painter should dispose them in a picture: but still there is a difficulty, owing to *red* and *blue* coming next one another, as being *equal* in *brilliancy*, and yet they are such opposite colours they never will harmonise together, but require the intervention of another colour. Green would answer the purpose, but I prefer inverting the order of them, and placing *violet* next the red, which will, on the whole, have a better effect; for green coming *last*, serves, in some measure, as a *balance* to *yellow*, the first and principal colour after white; and the violet being blended\* with the red, and partaking of its *brilliancy* and warmth, answers better, in point of illumination, than the mixture of red with either blue or green.

This alteration is simply no more than joining the two extremes of the Prismatic Spectrum, which, from the almost opposite degrees of strength in red and violet, seems a contradiction to what is right; but we shall see how it will answer in practice, and by this arrangement they will stand thus:—

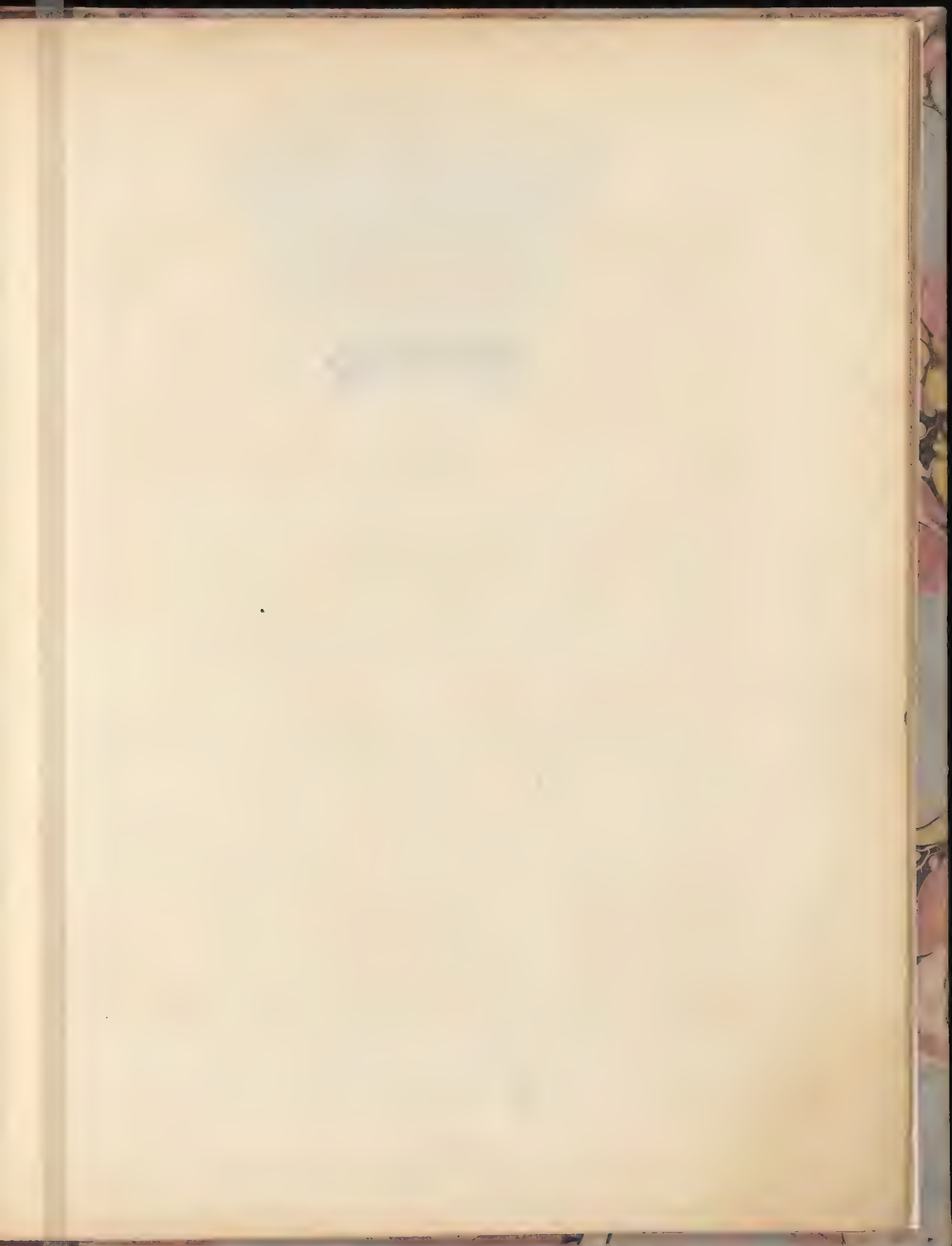
Yellow	-	-	-	48	<i>degrees.</i>
Orange	-	-	-	27	
Red	-	-	-	45	
† Violet	-	-	-	80	
Indigo	-	-	-	40	
Blue	-	-	-	60	
Green	-	-	-	60	

To bring this into use, draw a line upon paper, any size you choose, and

\* It must be remembered, that all the prismatic colours blend gradually one into another, and by that means form intermediate tints.

† I would not wish it to be thought, that I consider my own opinion of this arrangement as decisive, but as a matter that requires the investigation and sanction of other practitioners in the art; though it appears the best to me, at present, as the extremities of the coloured Spectrum, on the violet side, incline to red.







*It has already been said that it is not meant to arrange the colours in circles in a Picture; for besides the absurdity of that, the proper quantity of each could not be observed as may be seen here, if each circle was filled with its own colour. Therefore nothing more must be looked for in this than the proper situation for each colour in respect to the others, which is shown by the small portion that is coloured, and if the effect of Light & Shade on a Ball and concave object is considered, it may be known directly what degree of brilliancy or shade should be given to each colour in every different part of it. This Idea will be of use if kept in mind when Painting Objects from nature.*



divide it into 360 parts, or degrees; set one foot of your compasses in the centre, extend the other so as to take in 48 degrees, that is, 24 on each side the centre. On the *same* centre extend it again, so as to take in the proper portion of orange, do the same with red, and so on with the rest of the colours, filling each circle with the colour belonging to it, and blending each into the contiguous ones. Thus you will perceive all the colours arranged as it were on the surface of a ball\*, in a sort of perspective succession, each coming forward, or retiring from the eye according to its natural brilliancy: and if any one intrudes upon the eye, *before* its superior, you may be sure there is a fault in its situation. But if these colours were arranged in this order, in a picture, I believe there will not be found any greater error than what the necessary introduction of light and shade would sufficiently reduce to harmony, provided a nice attention is paid to the choice of the tints we make use of to imitate those in the Prismatic Spectrum: for it must be considered, that the pigments we have to express these colours, are *far inferior* in brilliancy—we have not any, I believe, *equal* to them. As to the *red*, vermillion will not express it, neither will red-lead, carmine, nor lake separately ~~of themselves~~; but those that appear to me the nearest to all, will be mentioned hereafter.

It will be said, colours arranged in circles in a picture would be very ridiculous, which ~~is~~ <sup>they</sup> certainly would; but that is not meant: it is only intended to shew the proper situation for objects of such and such colours in respect to the others, not that there should be entire circles of them. If you admit white into your picture, in its pure state, it must come *before* yellow, and a space be left for it: as to the proportion, or quantity of it, that will be decided by the portion of pure light (or *white* to *express* it) supposed to be on a ball, and by the same rule in your picture; so that the *size* of your picture must be your guide. The portion of each of the other colours must be regulated by the *proportion* they bear to one another in the Prismatic Spectrum, which is sometimes a difficulty, when the objects you

\* If they were thus arranged on the surface of a *real* ball, their perspective situations would be more readily perceived, as the *prominence* of the ball would really give each its proper distance.

mean to represent do not contain the proper quantity of each separate colour; for instance, you may have a yellow flower that contains *more* than the portion of yellow you ought to admit into the group, and the question is, what to do with it, and not destroy the *character*, or beauty of the flower by leaving part out. Here ingenuity must be called to your aid, for no one colour should predominate improperly over the others, but all be kept in their proper force as well as station. When I speak of this proportion of each colour, I include all the variety\* of tints, from the *pure* to the compound state: for when the proper quantity of light and shade is admitted into the picture, a very small proportion of the colours will remain in their pure original state; the greater part will be converted into compound *light* and compound *shade* tints. Besides this effect that light and shade will have on the general mass, it must be remembered, that every one of the prismatic divisions contains a gradation from a pure colour to a *compound* one with the *next*. The 45 degrees *red* contain pure *red*, also *orange* red in all its gradations, as do all the other divisions their gradations also; and if this Spectrum is attentively observed, it will soon be seen *how* small a portion of pure colour there is in each division, that is, in each of the coloured pencils of a ray of light, though they go by the general titles of yellow, orange, red, &c. &c. and must be admitted into a picture, by the very same; yet, if those separate *gradations* are not nicely copied, and the portion of them all together regulated by the proportion they bear to one another in the Spectrum, their effect in a *picture* will be very different <sup>from</sup> what it is there. I do not mean that there should be so many *degrees* of red, &c. &c. exactly as in the Spectrum, for it would be impossible to measure out colours that way, but it will be easy to observe what proportions they bear to one another, and to let the colours in a picture have the same: for instance, there are 48 degrees of yellow to 27 of orange, that is, nearly double the quantity of yellow to that of orange; therefore there should be the same proportion of them in a picture, in all the different gradations observable in the Spectrum: and the greatest nicety, in this, must be observed, for fear of destroying the *balance*

\* Which comprehends an infinite variety of other compound tints, formed by a mixture of the different prismatic colours with one another, that will take their station in the picture in point of *brilliancy*, according to the affinity each bears to that particular pure tint it *partakes most of*.



of the warm and cold colours, the latter of which, if summed up, bear just a double proportion to the warm, reckoning *green* in; for there are of the *cold* 240, of the *warm* 120 degrees; and, I believe, the nearer this proportion is kept to, in a picture, the more harmonious it will be.

It sometimes happens that a picture consists of several different masses; in that case, the pure prismatic colours, with their several compound light and shade tints, should occupy the first mass. The second is composed of *double* compound tints; the third, of still more obscure ones: a table for forming all which I shall add at the conclusion. When a picture is composed of only *one* mass, all the colours, both pure and compound, in their several degrees, may also be introduced; and it will, in either case, have all the force and effect that is in the power of colours to give. But I must here observe, that a picture composed of one mass, will never please the eye, in point of contour, so well as one that consists of several different ones;—for *distance*\* always lends beauty to the view: therefore, if *obliged* to have only one, I should, if possible, contrive to break it so as to produce the above effect as far as I could.

It frequently happens that a picture is composed of objects that have not one pure tint in them; in that case, they cannot have the same brilliancy, or force of effect; they are unavoidably more obscure, that is, less striking; but still may be in perfect harmony, if arranged by the same rule as the pure colours, and in the same proportion as aforesaid, but they will never come so forward to the eye; the strongest effect of light and shade and contrast altogether, will not force the compound tints so forward as the same degree of light and shade contrast will the pure unmixed prismatic ones, which plainly shews the latter are fittest for a prominent place, when you are at liberty to introduce a full assemblage of them. From the foregoing it will appear, that to form a good picture is not the work of mere fancy, there

\* “ ‘T is *distance* lends enchantment to the view,  
“ And robes the mountain in its azure hue.”

requires a great deal of thought and knowledge to produce one, even though it consist of nothing but flowers.

The first thing to be done at the commencement of a picture, is to consider what your materials consist of, and what effect you can make them produce: it is not often that a painter has all he wishes; ingenuity must often make up for the want of some, and the imperfection of others; and it is no small difficulty sometimes, when a strict attention to nature is requisite. But the best way to get over the difficulty, after you have made your drawing, and considered what parts you mean to come forward, and *what* ~~which~~ retire, is, to make a blot, of such colours as your subject allows you to introduce. If the whole range of colours is allowed you, dispose them as has been already mentioned, placing a prominent colour on a prominent part, and the retiring ones in their respective situations. If you have only *part* of the pure and brilliant colours at your disposal, then you must lessen the quantity of the other colours, rejecting the *contrasting* tints to *those you leave out*. If there be no *pure* yellow in it, there wants no *pure* purple; if no *pure* orange, then no *pure* blue is necessary: but if obliged to have *pure blue*, &c. in short, to form a picture out of discordant colours, *then* is the time to exert ingenuity, and by some means or other to harmonise them together, which is seldom impossible in works of fancy.

I must now speak a little further upon the compound colours, lest I should be misunderstood in what I have said respecting their situation in a picture. We must first consider which are the compound colours; and it appears that the Prismatic Spectrum itself presents you with an alternate range of *pure* and *compound*\* colours, by the blending of one with another;

\* At least apparently so, though there are some who consider them all as elementary ones; whether they are so, or not, I cannot take upon me to say. But I cannot help considering *violet* as *one*, instead of indigo, and the latter as a compound; and I am inclined to think so the more, because a pure and a compound tint alternately are visible, in the prismatic range, as low as blue: and it does not seem probable, to me, that their order should *change there*, and for which there appears no other cause, but that indigo and red (it is said) will produce violet, if it may be called one, for it is many degrees inferior to the real one; whereas violet and blue will produce a much nearer imitation of the prismatic indigo, therefore, in that respect, I think there is stronger reason to consider it as a compound colour than violet.



for what is orange, green, and indigo, but a compound each of the two colours contiguous to them?---these may be termed pure compounds; also an equal mixture of any of the remaining colours: but when light or shade, that is, white or black, is mixed with them, *then* they may be deemed treble compounds; but, mix *three* of them together, and you produce a more undecided colour,—for instance, red, orange, yellow, and the mixture will be neither a true red, a true orange, nor a true yellow, the just balance that formed the red and the yellow into a pure orange is destroyed, and you get a compound that is neither the one nor the other: or take yellow, green, blue, and again the balance is disturbed; it is not the *pure* green, but a gradation from it towards yellow: the same with blue, indigo, and violet; it becomes neither a blue, an indigo, nor a violet, but an obscurer tint differing from all. The foregoing, it must be observed, are successive prismatic tints, and it is only the varying from the prismatic proportions, in some of the instances, that produces the difference mentioned; but when you come to mix tints not contiguous to one another, you get into an obscurer class: for instance, red and violet; red and indigo; red and green; orange and violet; orange and blue; orange and green, &c. &c. Now, I believe, it will appear in some degree from this, how necessary it is for every one who wishes to excel in painting to be well acquainted with the mixture of colours, that is, the variety of different tints that may be formed by that means; and that it is working quite in the dark, and leaving it to mere chance, to attempt producing any particular effect, till the means of doing it are fully understood;---that, without knowing it, is proceeding pretty much upon the same footing with a person who sits down to copy a Greek, or an Hebrew manuscript, *ignorant of those languages*;—the characters may be exactly, and beautifully *imitated*, still the sense is lost: but (to carry on the allusion) if the languages are *understood*, then the *meaning*, and beauty of the subject are as it were translated into your mind, and another such subject, or another such picture, may be formed from the information gained; you then work as an original performer, not as a mere copyist.

I COME now to shadows, which I omitted speaking of in the early part of this work, intending to speak of them here, and consider them both as to form and colour: a very few examples will serve to shew they must be of whatever form the object is that throws them, and that they are subject to the same rules of perspective <sup>as</sup> ~~that~~ the objects themselves ~~are~~; but for a nicer delineation, a fuller knowledge of that branch of perspective is necessary: and, though it may seem foreign to flower-drawing, I must beg leave to observe, that it matters not whether the ~~shadow~~ <sup>body</sup> a shadow is projected upon is hard or soft, if of substance enough to receive a shadow upon it; and that it will always add beauty to a picture to have the shadows thrown with truth and judgment.

In regard to the colour of shadows, here *observation* must be called in to aid, though there are some general rules to be followed as guides; for instance, that two contiguous colours mixed together will form the colour of the shadow, projected from one upon the other, strong in proportion to the degree of light upon it, and obscure or *indistinct* in proportion to the opacity of the object that throws it, which may be such as to render the interior part of the shadow quite dark, and only visibly coloured at the termination; or the object may be so transparent as to cause a very slight shadow, in which case, the colour of it will also be slight: but experience must supply nicer rules. I shall only say further, that the putting in the shadows in their proper tone, has a very great share in the harmony of the picture, and that this alone shews the necessity of studying the compound tints.

I hope I shall not, by what I have said, be thought to have put an undue restraint upon placing the colours, or not to have left a practitioner at full liberty, who certainly may make choice of whatever colours are agreeable, and have a picture either *brilliant* or *obscure*. What I wish to enforce is, that when *that point* is determined, that *proper* colours may be employed to produce the *desired* effect, and not to expect it otherwise, for some parts would either be too warm, or too cold; in short, it would never be in harmony, if the perspective gradation of the colours (if I may use



that term) is not observed: but I by no means insist that I have succeeded in it, for some change may be found necessary, on trial, that my limited practice has not enabled me to make; therefore, what I offer is with entire submission to future experience, whether it arise from my own practice, or that of others, though with some confidence as to the *principles* I have gone upon, which I believe are a *sure* guide to form a theory upon, though others may succeed better than I have done; and should these pages fall into such hands, I must beg to be understood that I presume not to offer them to my fellow *artists*, but only to those pupils *whom* it is my lot, and my duty to instruct to the best of my power; and which a desire of doing more fully than the space of a short visit has sometimes enabled me to do as I wished, has been one cause, with other considerations, for making them public; and my intention, I hope, will plead my apology for many imperfections, no doubt, there are in them, that I am unable at *present* to discover. It is scarcely necessary to add, that in speaking, as I have done, of the arrangement of colours in perspective succession, I mean as to the general mass; and that all the colours, warm, cold, and compound, may be interspersed throughout the whole, independent of that, provided the general effect, or mass is not broken, or so much interrupted as to render it indistinct, and not striking at the first view. A thousand lesser beauties may be introduced this way, that must entirely depend on the painter's taste and judgment.

I have endeavoured to shew, in the foregoing pages, the disposition of the colours necessary to be observed in the objects represented, but I have often been at a loss, in my own practice, how to arrange them in the back-ground; to an ignorant person it may seem of little consequence, but I am not singular in saying, it requires full as much judgment, to do it properly, as any part of the picture\*; it depends entirely on the colours in the object you represent, and must vary with them, keeping to one certain rule, to observe

\* *Rubens* was asked by a friend to take a young man under his care, and, as an inducement, was told he could already paint, and could paint him his back-grounds: *Rubens* replied, "If he can paint my back-grounds, he does not want my instruction in the art."

the same tone throughout, and yet that it shall be so neutral as, though it makes *part* of the picture, yet does not interfere, or intrude upon the eye before any one part, or object in the group, but that it is *fairly behind* them *all*, at whatever distance you choose it to appear; whether it be one even flat surface, or a gradation of distant objects, still it must be in union with the whole, and the general colour of it formed by a mixture of the separate ones in your group, only not in the pure, but an obscure\*, compound state. If it consists of a dark side, and a light one, the one should oppose the light side of the group, the other the dark side of the same; and the same rule should be observed in your *fore-ground*, only increasing in *brilliancy*, but still keeping them so neutral as that they do not rise above the surface they were meant to represent, consequently that no *pure* superior tint is to be employed there, *since* those can only occupy a *single* part of the picture; if otherwise, it is the same as if there were two, or more equal lights in it, which never can be if you keep to nature.

In a preceding page of this work I have mentioned, that an agreeable picture might be formed, in many instances, with one principle---a harmonising and a contrasting colour: but I said nothing of the quantity, or proportion of each---that required more explanation than could be given in that place without interfering with this succeeding part; but the same proportion, or quantity of each must be observed with a limited number of the colours, that you observe with the whole range, and these with the compound tints; that the admission of light and shade, and mixture with one another, produced in the shadows and reflected tints, may be worked up into a good effect.

The prismatic range, as before observed, presents an alternate change of pure and compound tints, as may be found by your being able to produce the latter by a mixture of the two colours contiguous to the second, fourth, and sixth; in the same proportions they exist in the Spectrum, and may be called pure compounds: the *change* in the *order* of the colours, with a view to give precedence to some on the score of *brilliancy*, must be recollected, and

\* Throughout this little work I must be understood to allude *only* to flower-pieces.



that it will make a difference in regard to the compounds, which, under that change, will not all fall alternately in that arrangement\*;—but that is not material to their situation in a picture. I scarcely need repeat that these colours belong to the first mass, or most prominent part of a picture.

I come now to those fit for a secondary mass, the most *brilliant* of which are formed as follows, and form the first link in the gradation from pure to obscure colours. It has been shewn, that two colours contiguous to an intermediate one, will form an *imitation* of that colour; so will a mixture of two *compound* colours produce an *imitation* of a *pure prismatic* one, though very far inferior in *brilliancy*, but still not the less useful to a painter. Again, these *secondary pure* colours, that is, yellow, red, violet, and blue, will form, by mixture, *secondary compound* ones, orange, indigo, and green; and these secondary compounds will form, by mixture, pure tints of a *third* order, and these again compounds as before; so that supposing a picture consists of three distances, you have a distinct set of colours for each, the formation of which is set down in the following tables, and they may all be made lighter or darker by the addition of white or black. An infinite number of other compound tints may be formed out of these three different tables, by varying the mixtures, and the proportions; but to give tables of them also would lead me into so wide a field that it would take me beyond the bounds I prescribed to myself, and further, perhaps, than those into whose hands this will fall would be inclined to follow me. But should any one choose to pursue these trials, I refer them to Mr. *Galton's* Experiments on Colours, and to Mr. *Harris's* System of Colours: in the latter they will see the whole range of pure, and compound colours, and the contrasting tints to each, at one view.

\* Though even *there* every intermediate tint may be formed by the two contiguous ones.

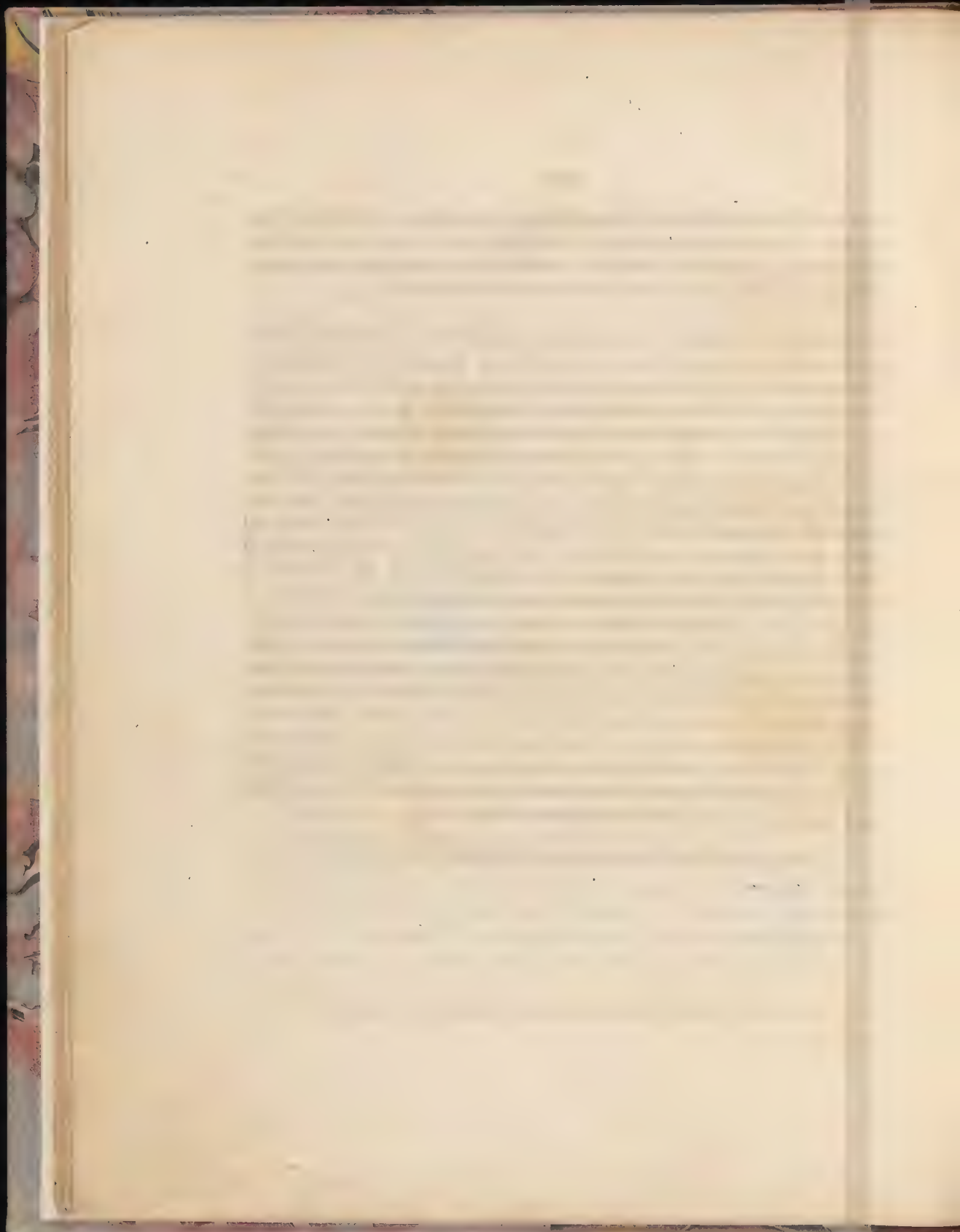




TABLE I.

*Prismatic Colours.*

Elementary ones.

Compounds.


48  
Yellow48 Yellow  
45 Red  
compose Orange45  
Red80 Violet  
60 Blue  
compose Indigo80  
Violet48 Yellow  
60 Blue  
compose Green60  
Blue

These colours, with the addition of White, to lighten, and Black, to darken, belong to the *first* MASS, or most prominent part of a group, and have no place in any other part of it.



TABLE II.


*Compound Tints of a second Order, composed from the pure  
Prismatic Compounds.*


Prismatic Orange and Green compose Yellow  of a second order.

Prismatic Indigo and Green compose Blue  of a second order.


Prismatic Orange and Violet compose Red  of a second order.

The above three colours compose the four following :

Red and Blue compose Violet  of a second order.

Red and Yellow compose Orange  of a second order.

Red and Blue compose Indigo  of a second order.

Yellow and Blue compose Green  of a second order.



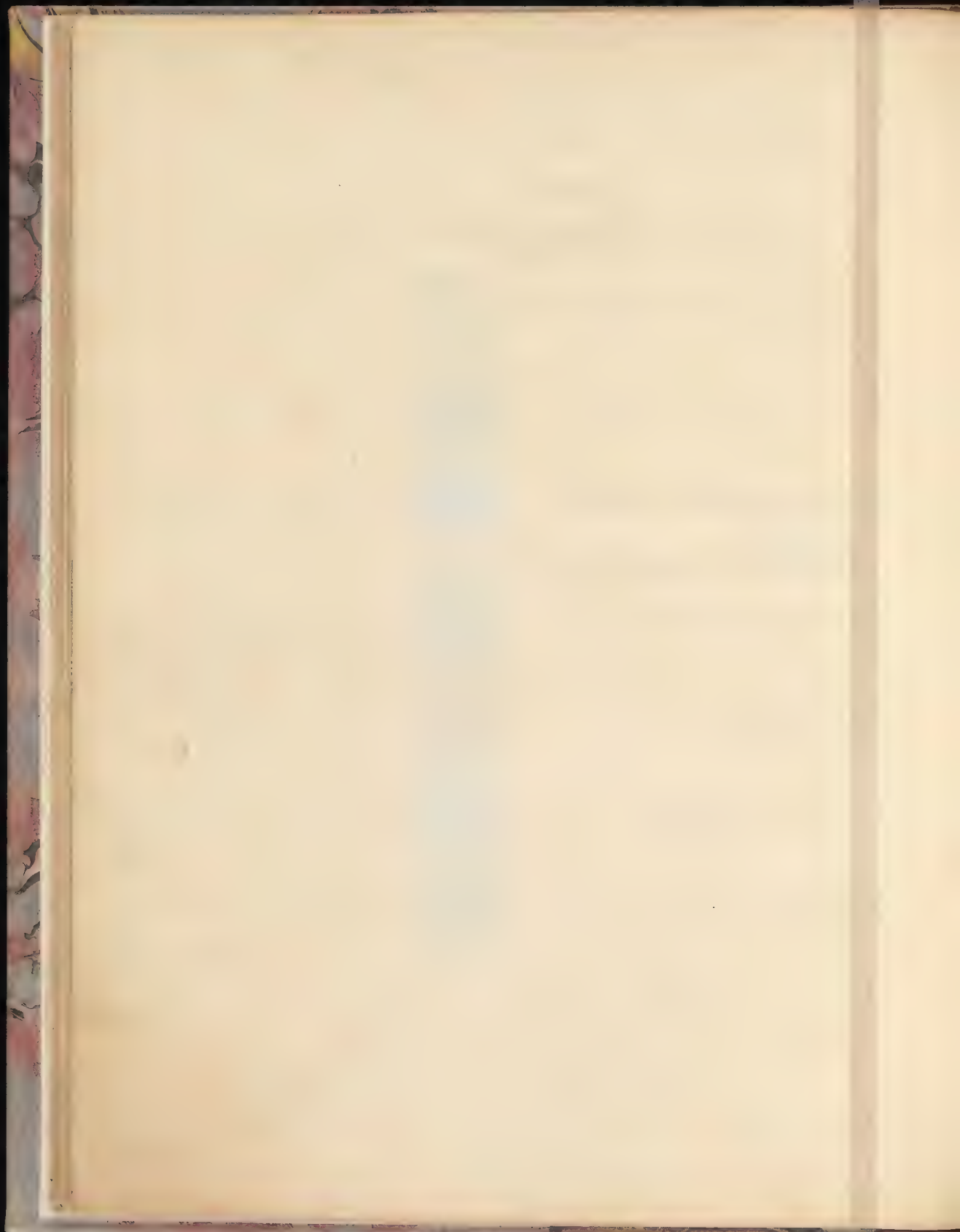


TABLE III.

COMPOUND tints of the third order *are not set down*, it being *unnecessary*, as they are formed from Table II, exactly in the same manner as those are from Table I; and produce similar tints, only *weaker*.

I shall only add, that in mixing these colours, the imperfections of the pigments we have to use must be allowed for; for they will all fall very far short of those seen in the Prismatic Spectrum; but I believe the following list will come as near as any:

Gamboge	.	.	.	.	.	for Yellow
Red-lead and Gamboge	.	.	.	.	.	for Orange
Vermillion and Red-lead	.	.	.	.	.	for Red
Lake and Prussian Blue	..	.	.	.	.	for Violet
Prussian Blue	.	.	.	.	.	for Indigo
Antwerp Blue	.	.	.	.	.	for Blue
Antwerp Blue and Gamboge	.	.	.	.	.	for Green





APPLICATION  
OF THE  
*WHITE BLOT*  
TO A  
GROUP OF WHITE FLOWERS.

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HAVING, I hope, rendered my meaning clearer to philosophical readers in the foregoing pages, than it was in the first edition of this Essay, I wish to make the work more useful to those also who wish for a guide to their Pencils, in forming groups of flowers, by giving particular explanations of the blots.

I shall therefore suppose, for sake of illustration, that each blot is a group of flowers; but must at the same time observe, that they have not been formed with the most distant idea of their being examples, in respect to the contour of flowers. They are merely compact blots of colours, exhibiting the effect produced by arranging them according to the theory delivered by the foregoing pages; and as such, I shall endeavour to explain the principles of their formation, by which they may be made useful to the student in painting.

If I was going to form a group of white flowers (say white wild roses), I would place my principal flower at No. 1, the most prominent part of the group, and of course most opposed to the light; and there, white should reign in full power, and in such a proportion as the size of the group (not the blot) requires.

I should place other flowers at 2 and 3, but the white in them should be so subdued, that the eye would not be caught, but *conducted* by them to the principal flower; the intermediate spaces between them and it should be filled with pale green leaves of a yellowish hue, so as to harmonize with the whites; and the strength of the colour between the full light, and the dark side, should be increased to a full tint; then gradually joined and mixed with the contrasting tint, which of course should be placed in the deepest shade.

But a question will occur, by what means shall black, the contrasting tint to white in the petals; or purple, the contrasting tint to yellow in the seeds; or red, to the green of the leaves, be introduced? for these three several colours, white, yellow, and green, all require their contrasts.

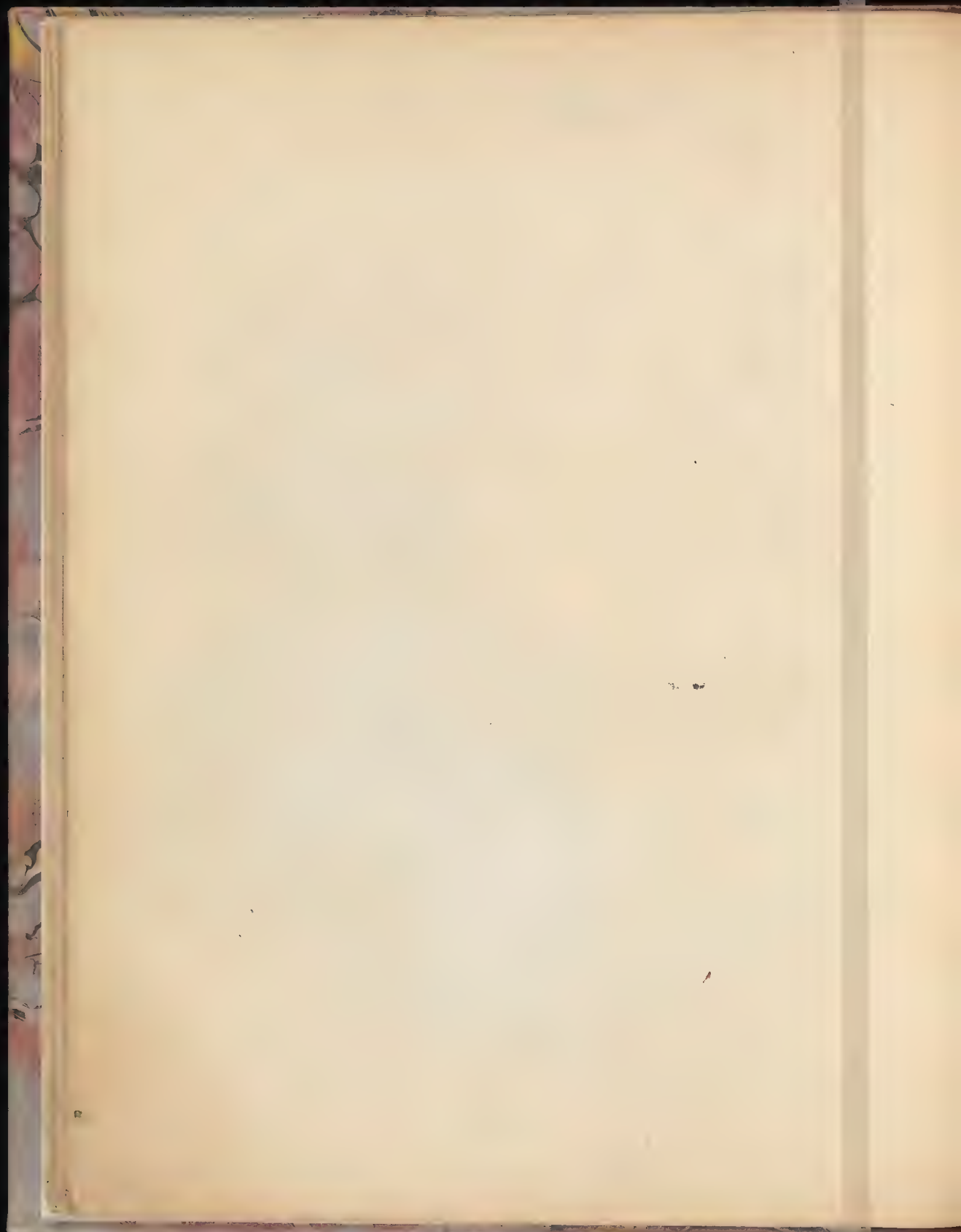
No subject could perhaps be found that can so easily supply them all, as a group of white roses; for in the leaves, buds, and stalks of the white dog rose, there are all the above tints in a variety of shades; so that the aid of no other object, nor flower, need be called in. These colours therefore may be dispersed throughout the shaded side, in as deep a degree as is wanted; and also throughout the whole in a weaker degree, so as to break the pure tints in all the minor shades, and give value to those in the prominent parts of the group; for neither the whites in the flowers, nor the other tints in the leaves and buds, must be kept together in one place; but each should be distributed throughout the whole.

By this disposition of them, there will be found the purest degree of one class of them in the highest lights, and of the other in the deepest

*Hydrangea*







shade; and if gently lightened towards the extremity, so as to form the reflected tint on the dark side, it will at once give roundness to the whole.

By this management, that breadth of light and shade may be accomplished, which, whether the group be highly finished, or not, cannot fail of having a good effect.

It being recommended to the student, to employ only *three* colours at first, to form a group or composition with, as exemplified in these blots, it is requisite here to observe, that the introduction of more is not a matter of choice, but of necessity, arising from the nature of the subject; for although a white, a yellow, or a red flower, &c. may be chosen for a principal colour, yet it seldom happens but that there is a mixture of other tints in them also; for instance, yellow in the seeds, or red in the leaves, as in the one now chosen. But when that is the case, it is not necessary that there should be the prismatic proportion of each in the group; it will be enough to give their harmonizing and contrasting tints, in as small a degree dispersed throughout, as the quantity of the yellow, for instance, requires; and if a greater portion is employed, it would become an example of *four*, or as *many* colours as are introduced, which would render it more difficult, and not in that instance so true a delineation of nature.

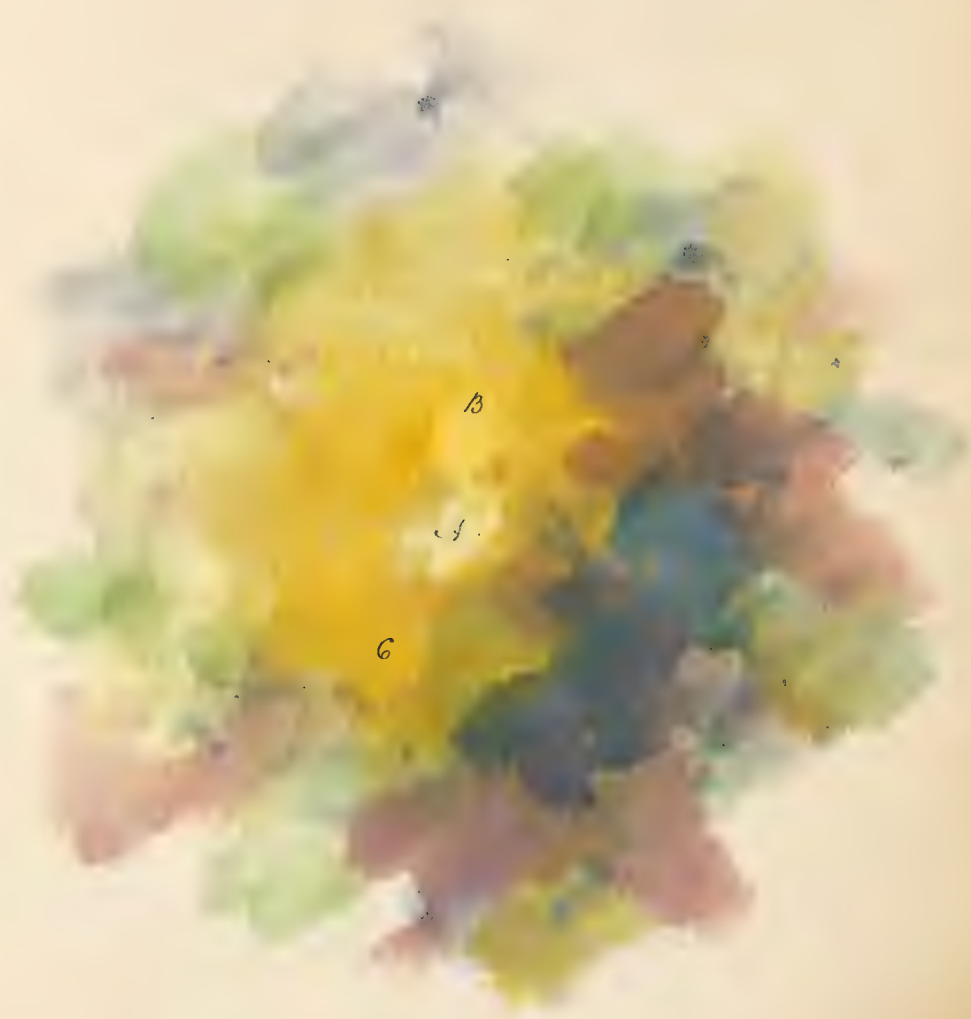
### APPLICATION OF THE YELLOW BLOT TO A GROUP OF YELLOW FLOWERS.

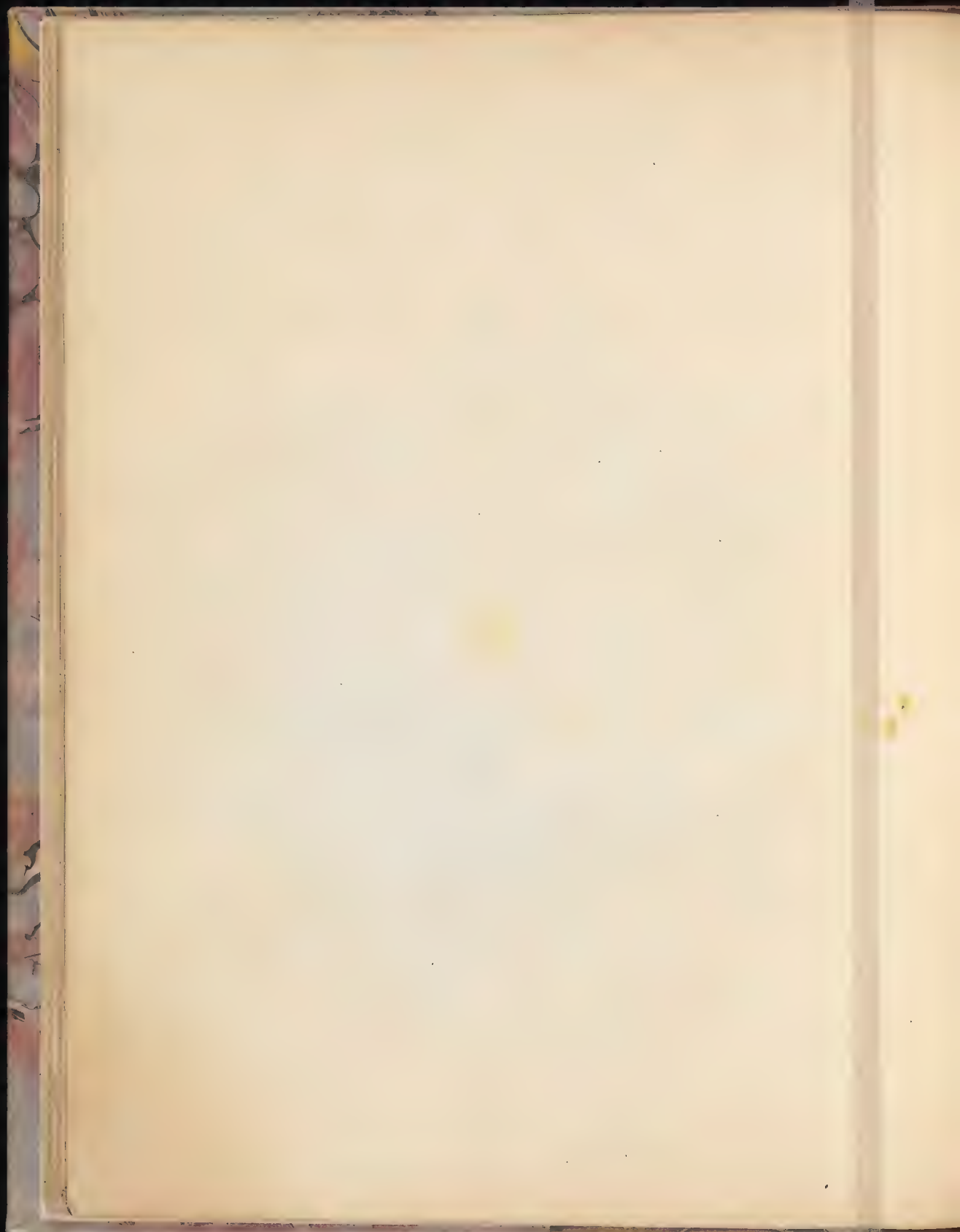
Under the idea that each of these blots are a group of flowers, I shall go on to remark, that yellow roses are chosen to exemplify the one before us, because these flowers differ entirely from the white one, in one respect; namely, that it affords no contrasting tint within itself; the plant being painted by nature, as it were, with two colours only, yellow and green, except, indeed, some brown in the stem and branches: more skill therefore is required to form a pleasing group of these flowers, than of the foregoing one of white roses; especially as the green leaves of the yellow rose are of too blue a tint to harmonize with the brilliant yellow in the flower, when placed in the full light at *A*. As a cold tint, in any quantity at least, ought not to be admitted there, none of the green leaves, therefore, should be placed near the brightest yellow, but some more of the flowers should be so disposed as not to receive the light fully on them at *B* and *C*, by which means a second degree or shade of yellow may be obtained, and intervene between the bright yellow and the blue green leaves; and thus form an harmonizing tint, either darker or lighter, according to the degree of shade into which they are thrown. Some faded green leaves also may be introduced, which in one stage of their decay offers a variety of beautiful tints, from a full yellow, to a deep brown; and in producing picturesque effect, every accidental circumstance of this sort may be fairly resorted to, in order to distribute the tints necessary to produce harmony throughout the whole group, when foreign aid is wanted for the purpose.

The contrasting tint now demands the attention, and as the plant does not afford it, purple must be thrown in by means of some other flower, or object; a ribbon, for example, of that colour twisted round, with grass of a purplish hue, might very well distribute the tint in various gradations throughout the whole



1850





group. The deepest degree of it must be placed at *B* and *E* in the deepest shade, there to oppose the brightest yellow; and if some of it inclined to red, that would oppose the green leaves. But all these colours, both in this and in every other instance of composition, must be very carefully brought in, so that not one of them shall interfere with the principal colour, or exceed the prismatic proportion in quantity.

It is not necessary, however, to portion out colours in a picture by prismatic degrees, for that is impossible; but it would be very easy to form a scale by them, and for every degree to allow such a certain part, or measure, a square inch for instance, and let that be divided into ten equal parts, as might be convenient for the purpose; for it matters not how large or how small the scale is: but when once fixed upon, it would be very easy to remember that there should be, for instance, double the quantity of violet to that of indigo; that there should be equal quantities of blue and green, and the different proportions of the other colours also; in short, that each colour in the group, or picture, should bear the same proportion to one another. The effect would then be precisely the same as in the prismatic Spectrum; and for want of this measure, or proportion, being observed, the eye is often hurt in examining paintings (otherwise admirable), where an over quantity of one colour often destroys the value of the rest; and makes one wish, at least, to throw a shade over some part of the exceeding tint, which would, in a certain measure, harmonize the whole; but in no degree be equal to that of preserving the true proportion pointed out in the rainbow, which if strictly attended to, would, I may confidently say, produce unvarying harmony in every imitation of it with the pencil. By the blot it may be seen, that some yellow of a much lower tone should be placed near the extremity of the group at *D*, on the shaded side, in order to produce the reflected tint, without which no roundness or projection will ever be obtained; besides the necessity of distributing the colours generally throughout the whole.

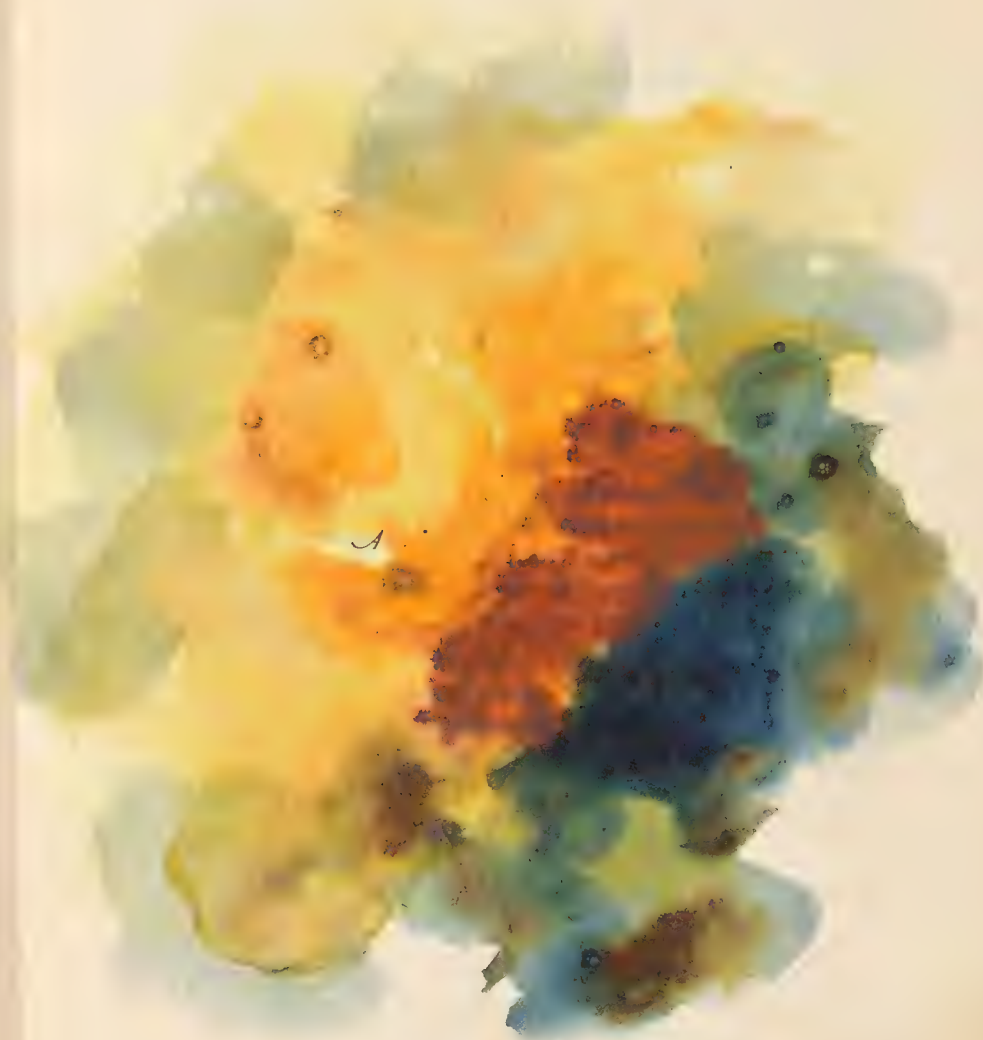


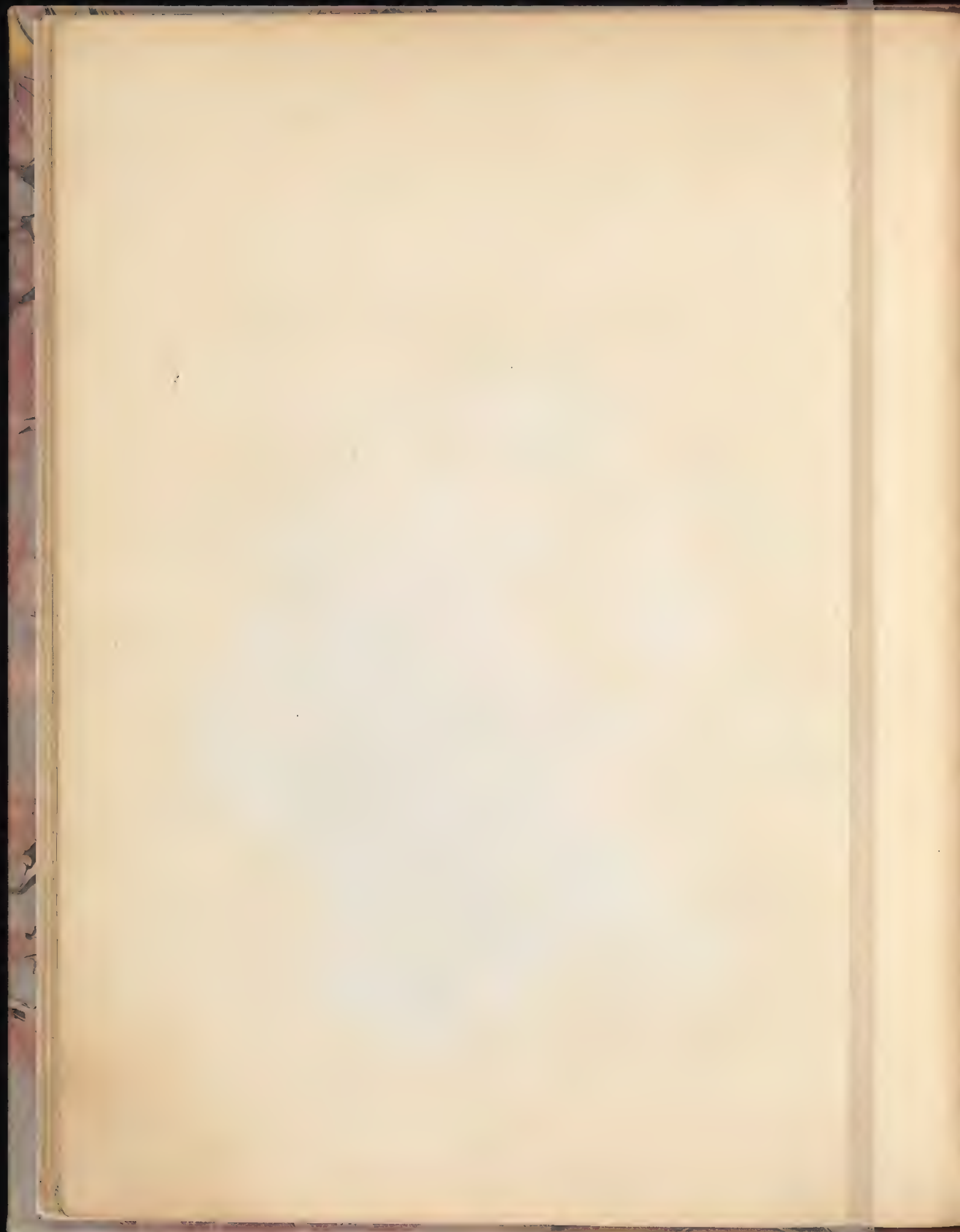
### APPLICATION OF THE ORANGE BLOT, TO A GROUP OF ORANGE-COLOURED FLOWERS.

There is no flower, that I recollect, better adapted to exemplify this blot, than the common nasturtium, whose petals display all the gradations of orange, from the lightest shade down to the deepest tint; and some of them also include scarlet, so that there could hardly be found a subject fitter for the purpose; especially, as the outsides of the petals, stalks, and buds, are coloured with a kind of pale broken orange, very favourable for the distribution of the colour throughout the group. The green leaves, too, are of a happy tint, as their yellowish green hue on the upper side, and grey tint on the under, makes it easy to dispose and intermix them with the flower in whatever way fancy may direct.

In this flower, therefore, we have every thing to be wished for in point of harmony of colour; but in regard to *contrast*, it is entirely deficient, and of course blue must be introduced by some other means. If we take a *flower* to do it, perhaps no better will be found, than some one or other of the convolvulus tribe, which might be beautifully twined and intermixed with the nasturtium: but of these I should not, on this occasion, make choice of the major convolvulus, as in that flower there are *two jarring colours*, blue and crimson; and the minor convolvulus would have a better effect. The white and yellow in that flower affords an opportunity of introducing both *black* in opposition to the white, and lilac or purple in opposition to the yellow; if the situation of the convolvulus in the group should make these contrasting tints necessary, that is, if the convolvulus has light enough thrown upon it to shew the yellow and white in their pure state, then, the addition of lilac and black in a *small* proportion, may increase both the harmony and spirit of the group. In the disposal of them in the group, the first thing to be considered, is the proper quantity of each; which, if the

*Pyramus*







*scale* has been fixed upon as before recommended, will stand thus; of orange, two parts, seven tenths,\* of green, six parts, and of blue, six parts; and then, let the size of each part be what it will, when properly combined, they will produce precisely the same effect as to harmony with that of the rainbow, or prismatic spectrum.

It is scarcely necessary to observe, that the separate parts or portions of each colour, are not to be confined to one spot or space in the picture, but should be distributed throughout the whole group. Thus at *A*, I would place *some* of the orange, where the light is supposed to strike most fully on the group; and the rest I would distribute throughout, some in the shade, and some at the extremities, *without apparent* design.

The darkest shade of blue, and some of the darker green leaves, should be disposed of at *B*; and some of the orange, mixed with these two colours, would form a reflected tint at *C*, and complete the dark side of the group; while lighter shades of these colours might be thrown into all the surrounding parts, by means of the flowers and leaves being placed in different positions, as fancy would direct, although some little study at first would be requisite, before the management of the colours became easy. The eye would soon become accustomed to it, and there would be no occasion to have recourse to formal measure, which would only be necessary, till the eye was capable of judging without its assistance.

\* Of an inch, or half a one, or of any space or compass that is suitable to the purpose; for the size of the scale must of course depend on the size of the picture and number of colours introduced.

### APPLICATION OF THE SCARLET BLOT, TO A GROUP OF SCARLET FLOWERS.

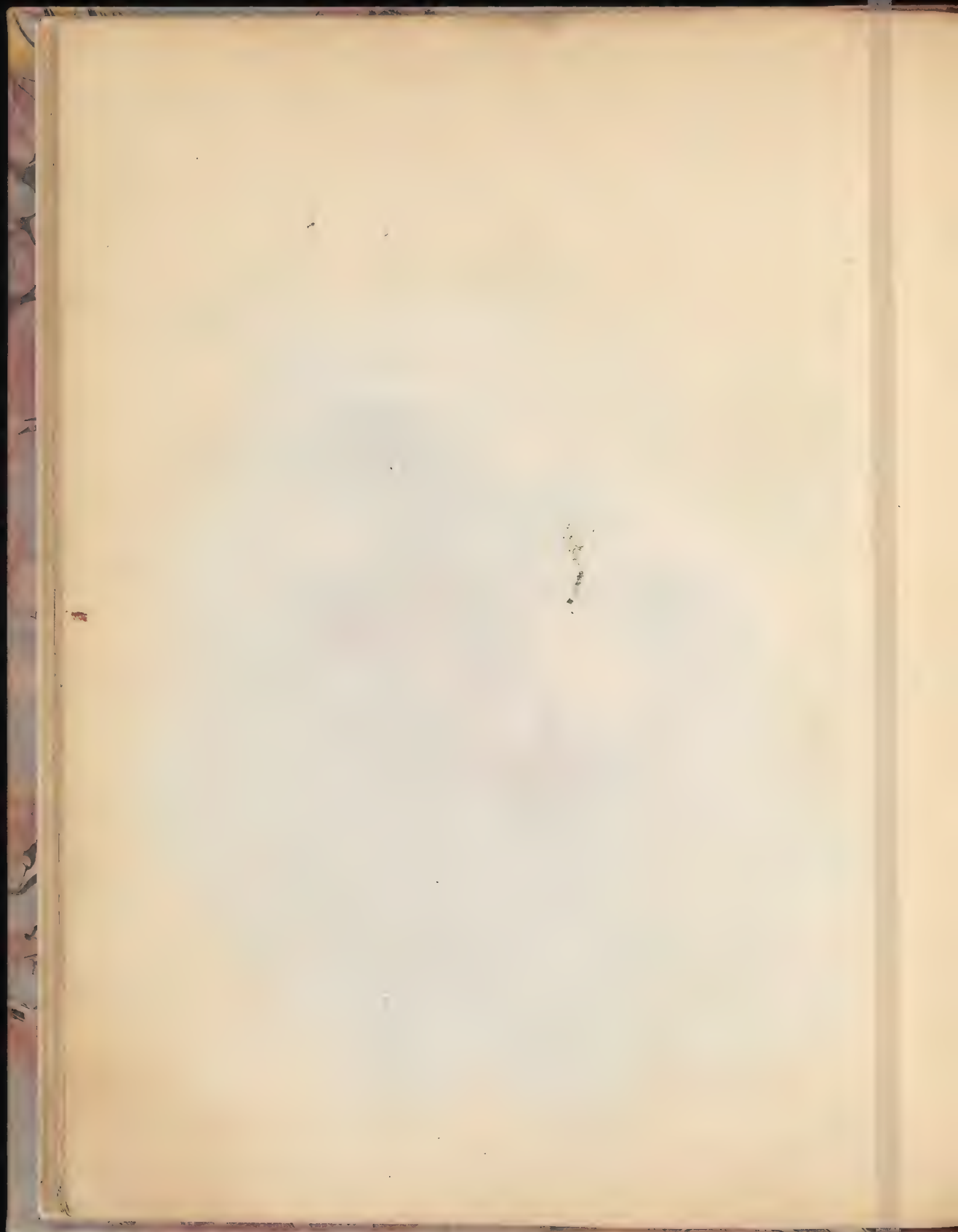
The pencil of nature seems to have been more frequently dipped in this colour, to beautify the various flowers and plants, &c. that display the numberless shades and varieties of its tints, than almost any other colour.

The whole tribe of poppies, anenomes, ranunculus, tulips, with many other beautiful specimens of the varieties of this colour, afford ample choice of subject, to exercise both the fancy and judgment of the painter, in disposing it in a group; but amongst this variety, there requires some care to select the shade of colour that may be denominated *pure* scarlet, or prismatic red. I believe the poppy will afford it more exactly than any other flower; therefore we will suppose the present blot to be a group of scarlet poppies, of which there are various shades, from a very light and almost orange scarlet, to one so deep, as to approach to the crimson.

The medium between these two extremes, is what we are to work with; for the one tint, by a mixture with orange, approaches to that colour; and the other, by a mixture with violet, becomes a crimson; and though it may be useful hereafter to know how to arrange and manage compositions with these colours, at present we will confine ourselves to the pure scarlet; the harmonizing tint to which is a tint between scarlet and crimson, formed by a mixture of both together, and is a rich and beautiful colour. Should the flower made choice of, have seeds, differing in colour from the petals, of orange or yellow, as is most usual, the introducing a fourth colour is unavoidable; and not to be regretted either, as it will improve and give spirit to the group, for merely red and green alone is not a pleasing mixture. The introducing yellow or orange, gives an opportunity of bringing in either blue, or lilac; and all these colours, if well managed, may produce a very







pleasing effect. The placing the most brilliant colour in the highest light at *A*, and the deepest contrasting tint in the darkest shades at *B*, should be invariably done in every composition; and letting the lighter ones take their proper places in the group, where all, if properly arranged, will join in giving effect to the whole.

We will now reckon up the tints that may be employed in this group. There are, scarlet in the petals of the poppy, yellow and orange in the seeds, green in the leaves, with blue and lilac in small proportions flung in, as fancy may direct; and these, with all their various shades, are what we have to work with,

Suppose *A* to be a field poppy, so placed that the light shall strike fully upon it, and give it all the brilliancy possible; while another part of the flower, without being in shade, should be so much out of the light, as to shew its *true* colour, which either too strong a light, or any degree of shade, would prevent being seen; and the rest of the flower should be so turned from the light, as to have their colour pretty dark. At *B* and *C*, I would place more poppies that should share the light with that at *A*; but have less brilliancy: at *C* there should be others of a weaker tint of scarlet, whose petals (as is sometimes the case,) incline a little to the rose colour, or pink; and at *E*, I should place several more of varied tints; all of them much darker than the others, which with the addition of shade, would form a rich dark scarlet, that would both harmonize with, and give value to those of lighter tints.

It often happens that we are obliged to bring in the contrasting tint, by means of some other flower or object; but the poppy leaf affords us the very tint we want, a *bluish* green, although some of a yellower shade will be requisite, as a contrast both to the cooler tints of the scarlet and lilac, and also as an harmonizing tint to the yellow.

I need scarcely repeat that all the lighter tints should be interspersed throughout; and partake either of the light, or shade, as the occasion may require, and in the quantities already pointed out.

### APPLICATION OF THE GREEN BLOT, TO A GROUP OF FERN.

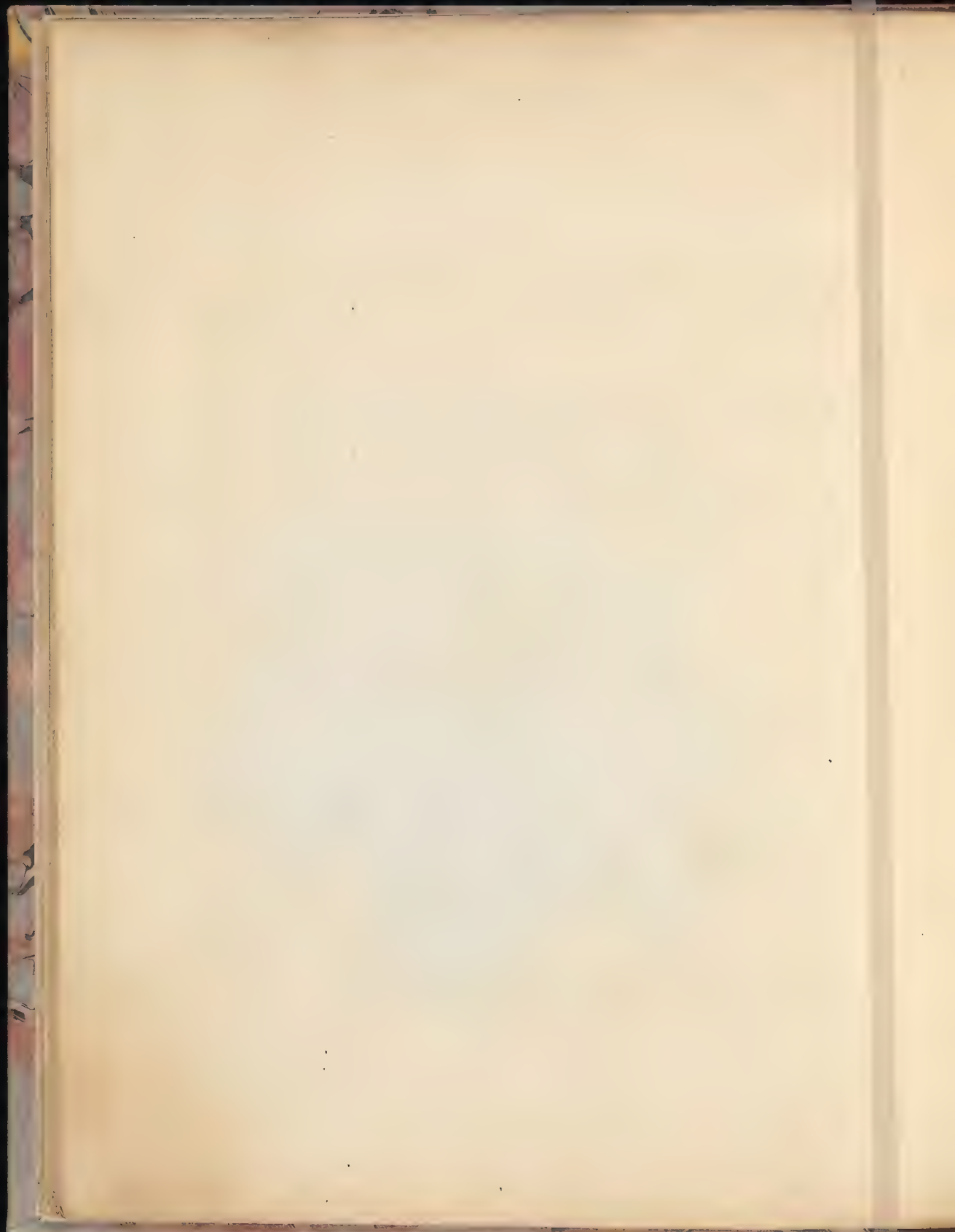
In illustrating this theory of colours, it is not necessary to confine myself to flowers, as it is equally applicable to every other object in nature; and there being few flowers whose petals are coloured with green, and of these few none of a favourable tint, the mind naturally directed chooses some other object to exemplify this blot by: but we need not go far in search of one, or even quit the vegetable tribe, for there are numberless plants that, independent of their flowers, are of themselves picturesque subjects for the pencil: of these, the common ivy trailing round the decayed trunk or branch of an old tree, the wild hop clinging with graceful wreaths and festoons to the larger shrubs for support, together with the whole tribe of grasses and ferns, may be enumerated as beautiful subjects; and capable of being so disposed, as to produce a very pleasing effect; most of them comprising all the tints wanted.

We will suppose this blot to be a branch or group of fern, *growing* at the side of an hedge, with some little ground round it. The fern leaf affords all the varieties of green, from the most vivid brilliant colour, next to yellow, down to a very deep shade, next to blue, its harmonizing tint; and to which it may extend, if necessary, to give so much depth to the effect.

For the contrasting tint, we must apply elsewhere; and its neighbour, the bramble, will afford all that is wanted; for in the leaves of that shrub are to be seen the most beautiful variety of dark reds, sufficient to oppose all the different greens in the fern; and a small trailing branch of it might, with propriety, be thrown in, so as to supply all the reds wanted in this composition. The purplish grey, often seen in the heath and around where the fern grows, would very well oppose the *almost yellow* green in some of its leaves. With these materials, then, we proceed to colour the group: but from the *form*







of it there arises a seeming difficulty; for the principal of the theory being, that the *most brilliant* colour *will* come foremost to the eye, how are we to manage, when that colour must, as in this instance, be placed on a *retiring*, *not* on a *prominent part*? for the vivid yellow green in the fern always appears in the young shoots in the very centre of the plant; while the older leaves growing round it, and projecting much forwarder, lose with their growth their first vivid colour, and assume by degrees one of so dingy a cast, as more properly to belong to the second table of colours than the first.

We must consider, in this first place, that it is by *contrast*, or opposition, that even white is made either to advance or retire; and it is the same, in a certain degree, with all the other colours: although the power of a brilliant colour to attract the eye first, still remains to be combated with; and in this, and also in every similar case, it must be done with art and judgment.

Suppose then *A* to be the situation of the young central shoots of the fern, and of a brilliant yellow green; let the next leaves behind at *B*, have a *bluer* and a *fuller* tint, those next behind them again broken with a *bluish grey*, and those behind them again of the same tint, but darker, and lost in a greyish ground, but let some of the contrasting tint be faintly visible in those parts of these distant leaves that are next to, and lost in the ground. On the contrary, let those that come the next forwarder from *A*, at *C*, have as warm and full green as can be given, without departing from the natural colour of the leaf; and let as strong a body of light rest on *DDD* (which we will suppose to be three projecting leaves), as their form will admit of, and their colour be the natural dingy green. The parts under each leaf, should have as much of the contrasting tint flung into the shade beneath it, as will not hurt the eye; and let the fore ground be a mixture of red, grey, and green, gently blended into each other, so as not to interrupt the general effect of breadth of light and colour that should mark the composition at first sight. The leaves growing at *EE*, on each side, should present a gradation of tints, blending gradually from the cold tint at *C* to the warmer one at *B*, darkened on the one side with shade,



and lightened on the other, so as to inclose the central shoot at *A*, as it were, in a dish or cup. By this means, the vivid yellow green in the centre at *A*, will *remain there*, and *DDD* will come forward to the eye, whilst the other leaves will keep in their respective places. But still the eye will be too much attracted to the centre, and *DDD* will want more assistance to bring them as forward to the eye, as their natural situations require. For this, we must have recourse to some accidental circumstance, that may with propriety be made use of to assist them: for instance, a young broken shoot of the fern accidentally lying upon them, into which may be thrown a still more vivid yellow green than that at *A*, which would immediately fling that back and *DDD* would attract the eye first, especially as the contrasting tints near them would assist and produce the desired effect.

I mention this, as only one mode of doing it; but the various ways that it might be done, will occur without difficulty to a pencil guided by taste and judgment; for to attempt it by altering or lowering the tone of colour in the centre, and increasing that at *DDD*, &c. would not be to describe the plant truly, to do which its real colour must be strictly adhered to.



Blue. C.





## APPLICATION OF THE BLUE BLOT TO A GROUP OF BLUE FLOWERS.

Blue, as has already been observed, is not a favourable colour to form a composition with; but a painter should be able to surmount every difficulty, as well as avail himself of any advantageous circumstance that may attend the various subjects that happen to employ his pencil.

To form any thing like a pleasing composition of blue flowers, he must select some of a pale colour, the harmonizing tint to which may be either a deeper blue, or a green, or *both*; if, as in this case, it be necessary to introduce the latter, which in a group of flowers, cannot be dispensed with, although a composition of blue might be formed without it. Among the variety of blue flowers, there are very few but what have a mixture of other colours in them, although blue may predominate, so as to be the distinguishing colour; and white, yellow, crimson, and lilac, are seen in smaller portions in the petals of all the blue convolvulus tribe. In the minor convolvulus, the subject, we will suppose, *of this blot*, both white and yellow form the star in the centre of the flower; and with orange, the contrasting tint to the blue, and black to the white, there will be no less than eight different tints to work with, and distribute throughout the group. Although three of them only are considered as principals, and to be measured out in prismatic portions, which are the blue, the orange, and the green; the others, as before directed, are to come in only in the small quantity in which they appear in the flower.

With these materials, then, I place the most brilliant tint or blue flower at *A*, in the full light, with some deeper shades of it in more of the flower around it; the contrasting tint, orange, at *B*, in the deepest shade; and it will be easy to select an orange flower of a proper hue, for it should *not* be of a pure, but of a dingy tint; the green leaves should

be interspersed throughout, but none of them can be of a brilliant green; for, unless of a much lower tone than the blue, they would attract the eye before it; and therefore care must be taken that neither the green in the leaves, nor the yellow in the flower, are made too striking, lest they interfere and hurt the brilliancy of the blue. The white is friendly to the blue, and will not diminish its lustre; but the blue and *red* must be thrown in very slightly; the latter by means of some accidental circumstance; and the black in as small a quantity as the *pure* white demands, to assist in the *deepest shade*, and give spirit to the whole. The reflected tint must be formed by a mixture of the orange, blue, green, and black being thrown into flowers and leaves at the extremity on the shade side, while the lighter tints may be given in the backs or outsides of the leaves and flowers, on all the surrounding parts on the light side, while the brilliancy of the colours are kept in the centre, or most prominent part of the group.





*W. J. H. 1815.*



## APPLICATION OF THE CRIMSON BLOT TO A GROUP OF ROSES.

The great variety of different roses which the gardens now afford, gives the pain to the power of exemplifying this blot, either by a pale or a deep shade of the colour, as there is every gradation of it, from the palest pink next to white, down to the deepest shade of crimson, next to violet; and even to violet itself, in a new variety of the flower, named the *blue*, but more properly the *purple* rose.

I shall endeavour to dispose of the whole range, as being a more useful example than a part of it only: but the colour, although beautiful, not being in itself of any great force, especially in the palest degree, the addition of white into the composition, which of course admits black, would be of considerable advantage; as without such aid, it would want that force of effect necessary to give it sufficient consequence as a composition, but which the addition of black and white would supply.

The contrasting tint green, is supplied by the rose leaf, which contains all the various shades that can be wanted.

The yellow seeds of the rose, which often approach to orange, call for both blue and lilac; the latter a new variety of the single rose affords, but the blue must be introduced by some other flower. With these materials, or colours, compose as follows.

At *A*, a white rose must be placed, so as to receive the light fully; around it there may be others of a mixture of pink and white, with yellow seeds so pale as to harmonize with the white; at *B* and *C* some of a full pink with less light upon them; at *D* there should be a weak mixture of pink, lilac,

yellow, blue, and green, which, if they form a separate mass by themselves, will increase the value of the more brilliant tints in the centre of the group. At *E*, black and the contrasting tint should be placed; and between them, and the light pinks on the centre, there should be some of a fuller hue, gradating down to violet, in the deepest shade; the reflected tint at *F* may be composed of *grey*, and a mixture of the other tints; but one thing must be observed, viz. that yellow must be sparingly used throughout, and likewise the orange, as neither will do in a much larger proportion in this composition, than as they are seen in the seeds.







# APPLICATION OF THE VIOLET COLOURED BLOT, TO A GROUP OF VIOLET OR PURPLE FLOWERS.

The different varieties of the common crocus will afford us almost all the shades of violet, or purple, beginning with lilac, the lightest of them, down to a pretty deep shade though not to the deepest; but as we shall form the group of the lightest or palest flowers, a very deep shade of purple will not be wanted for the harmonizing tint; and if we take the wall-flower to convey yellow, the contrasting tint, we may have every shade also, from the palest green yellow, to a full tint, approaching to orange.—The very scanty portion of green in the leaves of the crocus, makes it requisite, to select some flower, whose leaves will afford the necessary quantity, which even the leaf of the wall-flower will hardly supply; and their form, too, being somewhat similar to those of the crocus, a long narrow shape, is a circumstance not in favour of the beauty of them in the group, in point of contour; but those flowers blowing at the same time in the spring, it naturally points out the combination, although with this disadvantage, but which it must be the painter's endeavour to obviate, by introducing the leaf of some other flower or plant; and no better presents itself to my recollection at present, than a young climbing twig of the wild honeysuckle whilst in bud, before the flower opens. The green leaves like those of the nasturtium, afford two very different tints of green on the *in*, and *outside*, which, as they are both of a lighter tint than either the crocus or wall-flower leaf, would serve admirably to distribute the green into the lighter parts of the group; and the honeysuckle, too, before it is opened in a cluster of purplish, pale yellow buds a sort of broken tint that would conduct the eye to a distance from the principal mass of lilac in the centre and shade side of the group. The unopened buds of the wall-flower also presents a different shade of broken purple tint, as do the stalks, which are often tinged with purple; and all these little circumstances give so many opportunities of distributing the purple or lilac throughout, which it must be more profusely than either the yellow or green;



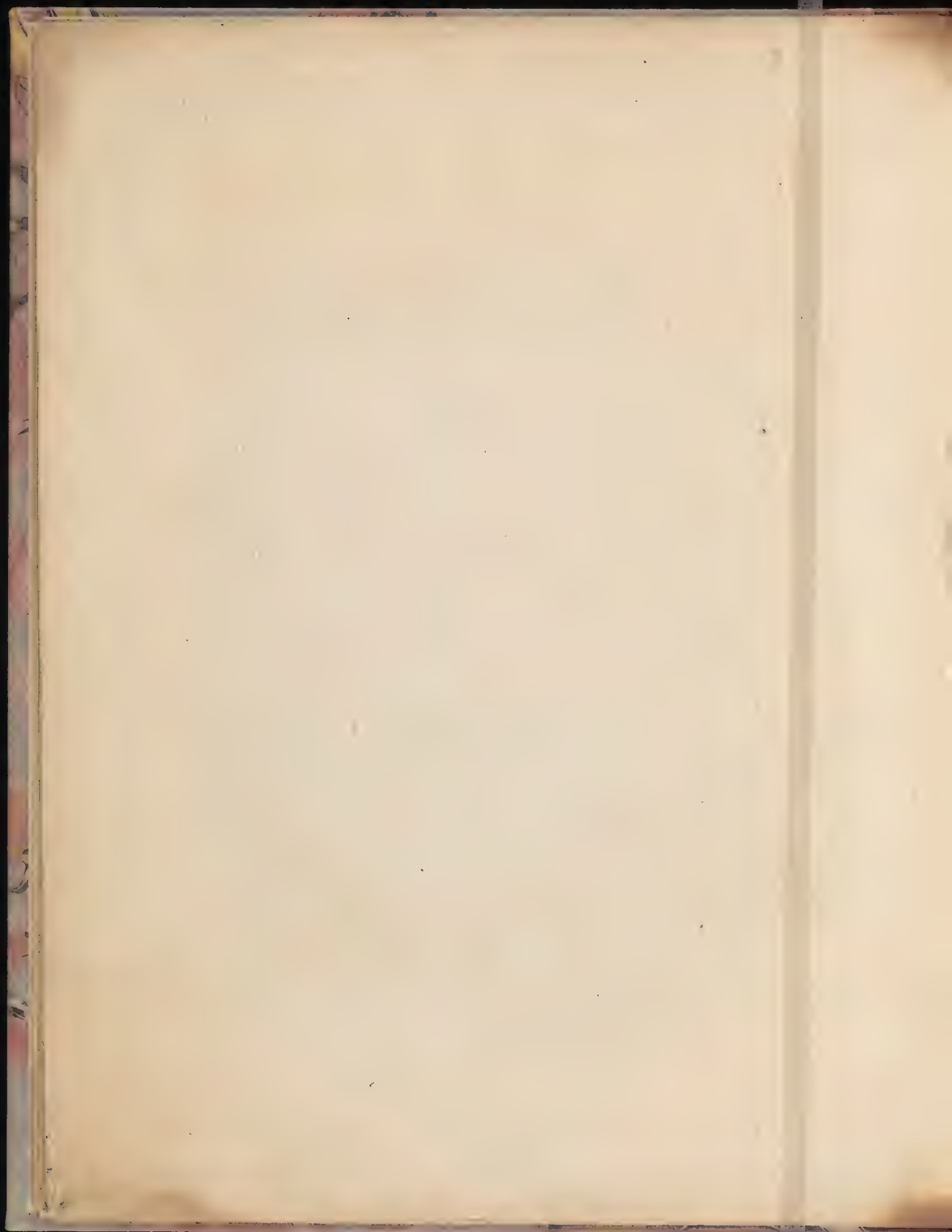
for these should be eight parts of the lilac or purple colour to four parts five tenths of yellow, and six parts of green. The shortness of the crocus stalks and the delicacy of its texture, forbid the least appearance of pressure in grouping it with other flowers, and would induce me to dispose it in some way that would suit its delicacy, and seem to preserve its freshness, which is injured in a very short time after gathering. I should therefore place them as fresh gathered in a basket, or in an elegant vase: the colour of either of them ought to be a pale tint, of yellowish brown; the palest-coloured crocus would then come in at *A*; while a trailing branch of the honeysuckle, with its pale yellow and purplish hue in the buds, would intermix with more crocusses of a deeper tint at *B* and *C*, and form the lighter parts; which the wall-flower, either double or single, would, with some of its green leaves, occupy the deepest shade in the group, when of course it would be much subdued in colour, by being in that situation. There are many different degrees of yellow seen in that flower, and one of a favourable tone should be chosen, which should not be one whose petals are marked with the orange brown, but those of a plain yellow hue. The reflected tint at *D* may be produced by some of the crocusses being flung into shade, intermixed with the wall-flower. I should be very sparing of those of the crocus leaves, for their spiky form would be a disadvantage to the group.

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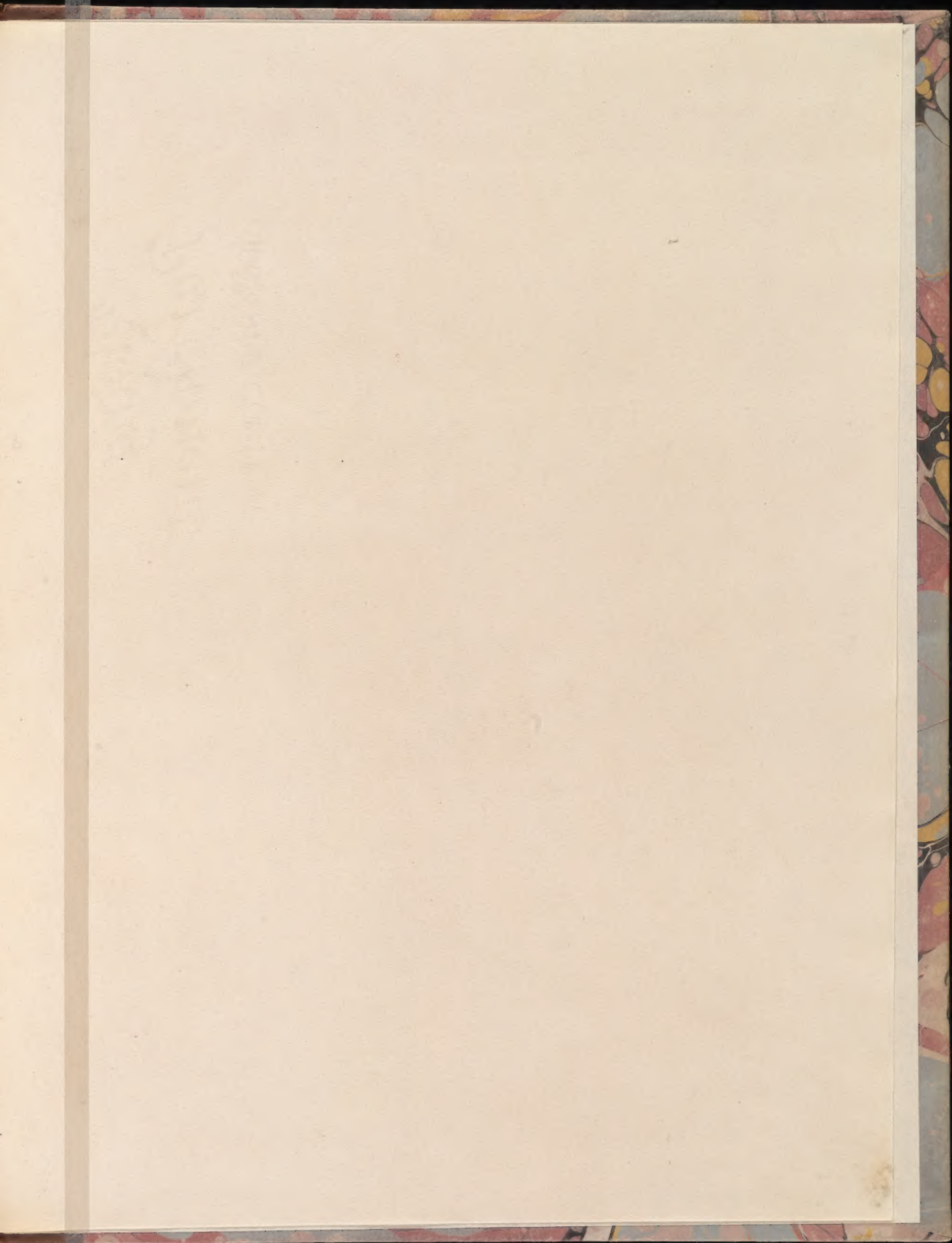
Although I have endeavoured to make this little work as plain and useful to my readers as possible, I am aware I may still have failed in rendering it as much so to practitioners, as I could wish; for it is scarcely possible to express directions for forming groups, so clearly expressed in writing, but that in some instance or other, obscurity and difficulty will arise to the student; but having, however, done my utmost with my pen here, I beg leave to refer the student to my last work, entitled *Ornamental Groups*, where they will find, in the progress of that work, every one of these *imaginary* groups exemplified by real ones;\* which, I trust, will answer the purpose intended, of fully illustrating the theory laid down in this book.

\* The white and crimson blot are both exemplified by groups of flowers, in the first number of the work alluded to.









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